

**CITY OF NEWTON
PURCHASING DEPARTMENT**

REQUEST FOR PROPOSAL:

**ACTUARIAL SERVICES
NEWTON RETIRMENT BOARD**

RFP #09-47

**NOVEMBER 2008
David B. Cohen, Mayor**

CITY OF NEWTON, MASSACHUSETTS

PURCHASING DEPARTMENT

purchasing@newtonma.gov

Fax (617) 796-1227

December 1, 2008

ADDENDUM #1

INVITATION FOR BID #09-47

Actuarial Services Newton Retirement Board

THIS ADDENDUM IS TO: Answer the following Question:

Q1. How many copies of the proposal for RFP #09-47 would you like us to send?

A1. 1 original and 4 copies

All other terms and conditions of this bid remain unchanged

PLEASE ENSURE THAT YOU ACKNOWLEDGE THIS ADDENDUM ON YOUR BID FORM

Thank you.
Re Cappoli
Chief Procurement Officer

CITY OF NEWTON, MASSACHUSETTS REQUEST FOR COMPETITIVE PROPOSALS

ACTUARIAL SERVICES

November 13, 2008

INTRODUCTION

The City of Newton, Massachusetts and the Newton Contributory Retirement Board invite qualified actuarial firms to submit written fixed fee proposals to conduct an annual actuarial valuation studies of: a) the Newton Contributory Retirement System; b) post retirement health benefits provided by the City of Newton to existing and future retirees; and c) workers compensation benefits provided by the City of Newton to injured employees and retirees. Qualified actuaries are encouraged to respond to all or any part of this request for actuarial consulting services. Separate cost proposals must be submitted for each component of the required services.

EXEMPTION

Municipalities in Massachusetts are not required by law to carry out public bidding for contracts for retirement board services (*M.G.L. c.30B, s.1(b)19*). Interested respondents should take note that the provisions of the bidding laws, DO NOT APPLY to this Request for Proposal.

AWARD

It is the City's intent to award one or more contracts to the respondent(s) with the lowest price proposal deemed to be responsive and responsible.

BACKGROUND INFORMATION

Newton Contributory Retirement System

The Newton Contributory Retirement System was established in 1928 by special act of the legislature. The plan was later amended to provide benefits consistent with Chapter 32 of the Massachusetts General Laws.

Retirement benefits are provided to substantially all City employees except for public school teachers and administrators, who are members of the Massachusetts Teachers' Retirement System.

Beginning in 1984 the City began funding the contributory retirement system on an actuarial reserve basis. This funding included both current year service and the amortization of past service costs. Effective August 2007, all system assets were transferred to the Commonwealth of Massachusetts PRIT fund. It is the policy of the Newton Contributory Retirement Board to contract for an annual actuarial valuation of the system. Buck Consultants have provided actuarial valuation services to the Newton Contributory Retirement System since the 1920's.

A copy of the January 1, 2007 valuation of the plan is attached.

Post Retirement Health Benefits

In addition to providing pension benefits, the City provides health insurance coverage to retirees and their survivors. Retirees pay 20% of the cost of health insurance and the City pays the balance. The City currently funds its share of the cost of providing post retirement health benefits on a pay as you go basis. For the fiscal year ended June 30, 2008 total pay-as-you-go expenditures for post retirement health benefits were \$13.4 million, \$22 million less than the annual required contribution determined as a result of the City's June 30, 2008 OPEB study.

Since 2001 the City has contracted for an annual actuarial valuation of the City's post retirement health liability. Attached is a copy of the June 30, 2008 valuation.

Workers Compensation Benefits

The City of Newton has historically self funded workers compensation exposures. In 1994 the City established a self insurance fund; contracted for an annual actuarial valuation and began funding on the basis of the actuary's recommendations. Since 1995, the assets in the workers compensation self insurance fund have been under professional management. The fund is actuarially funded at June 30, 2008.

Attached is a copy of the June 30, 2008 valuation.

CONTRACT

The City of Newton and Newton Contributory Retirement System intend to enter into one or more (5) year contracts for the specified actuarial valuation services. All contracts shall be for a fixed annual amount. Final decision making authority for the Newton Contributory Retirement System rests with the Newton Retirement Board. The final decision regarding the post employment health and workers compensation actuarial valuation services will be with a (3) member committee consisting of the Chief Administrative Officer; the Director of Human Resources; and the City Comptroller.

SCOPE OF SERVICES

The required services include a full actuarial valuation and detailed report as of January 1, 2009; 2010; 2011; 2012 and 2013 for the Newton Contributory Retirement System; and full actuarial valuation and detailed reports for the post retirement health benefits and workers compensation benefits as of June 30, 2009; 2010 and 2011; 2012' and 2013.

The Newton Contributory Retirement Board will provide all data necessary to complete the retirement valuation on diskette. Workers compensation and post employment health benefit data will be provided by the City of Newton Personnel Department.

The valuation of the Newton Contributory Retirement system shall be prepared in accordance with the methodology and assumptions used in the January 1, 2008 actuarial valuation report (attached) and shall contain all information and disclosures included in this report along with all information necessary for the City to comply with financial reporting and footnote requirements of the Governmental Accounting Standards Board and the Commonwealth of Massachusetts Public Employee Retirement Commission. Draft reports shall be delivered to the Retirement Board not later than 60 days following the receipt of required data from the Retirement Board.

The valuation of the Workers Compensation Self Insurance Fund shall be prepared in accordance with the methodology and assumptions used in the June 30, 2008 actuarial valuation report and shall contain all information and disclosures included in the most recent report and all information necessary for the City to comply with the financial reporting and note disclosure requirements of the Governmental Accounting Standards Board. Draft reports shall be delivered to the City not later than 60 days following receipt of required data from the City.

The post retirement health valuation shall be made in accordance with the methodology and assumptions used in the June 30, 2008 report (attached) and shall contain all information necessary for the City to fully comply with the financial reporting and note disclosure requirements of the Governmental Accounting Standards Board.

ADDITIONAL INFORMATION

If it becomes necessary to revise any part of this RFP or otherwise provide additional material information, an addendum will be issued by the City and furnished to all firms that have received a copy of this document.

All proposals become the property of the City of Newton and are subject to disclosure as required by Massachusetts General Laws and the ordinances and regulations of the City of Newton.

The City is not and will not be liable for any cost(s) incurred by respondents in the preparation of responses to this RFP.

The City reserves the right to reject any and all proposals if it is determined to be in the best interests of the City of Newton.

Final proposals must be submitted to the Chief Procurement Officer, City of Newton, 1000 Commonwealth Avenue, Room 204, Newton, Massachusetts 02459 not later than **December 4, 2008 at 11:00 a.m.** All proposals must be in a sealed envelope and clearly marked City of Newton/Newton Contributory Retirement System Actuarial Valuation Proposal.

All proposals become the property of the City of Newton and are subject to disclosure as required by Massachusetts General Laws. The City will not be liable for the costs incurred by vendors in responding to this request for competitive proposals.

The City reserves the right to reject any and all proposals if it is determined to be in the best interests of the City.

Although it is expected that the City will enter into a multi-year contract for the required services, the purchase of services shall be subject to annual appropriation by the City.

It is anticipated that a final decision will be made and contracts awarded during the month of December 2008.

INFORMATION TO BE SUPPLIED BY PROPOSERS:

In order to simplify the evaluation process and obtain maximum comparability, the City requires that all responses to this RFP be organized in the manner described in this section. Any material deviation from this format may result in disqualification of the proposal.

- A) Title Page
Project Title
Name of Proposer
Address, telephone and fax number, and e-mail address of proposer
Name of primary contact
Submission date
- B) Letter of Transmittal
- Acknowledge ADDENDUM(s) if any (as well as in your Price Proposal)
 - Briefly state the proposer's understanding of the work to be done and make a positive commitment to complete all work and deliver all reports within the required time period.
 - Specify an all inclusive fixed annual fee for the work that is to be performed and state that the proposal is valid for at least 60 days.
- The letter must be signed by an individual authorized to contractually bind the firm.
- C) Table of Contents
- Include a clear identification of material by section, and page number.
- D) Professional Experience:
Describe the firm's experience with Massachusetts retirement systems; governed by CH 32 and Massachusetts's workers compensation and group health self-insurance programs during the past five years.
- Identify the specific professional staff that will be assigned to the City of Newton and provide copies of their professional resumes. Resumes must identify the specific education and training, and experience of these individuals.
- Describe the firm's participation in professionally sponsored quality control review programs.
- Provide the name, address, and telephone number of at least (3) public sector client references, whom the City of Newton may contact for information on prior retirement system; workers compensation and post retirement health benefit valuations.
- E) Approach to Engagement:
State the proposer's understanding of the services to be performed and the work products to be delivered.
- Submit a proposed work plan to accomplish the required services within the required time frames. The work plan must include time estimates for each major component of the project, by staff level, and staff assignments. Please include a brief discussion of the procedures to be employed in each major component of the project.
- F) Compensation:
- The proposal must include **Attachment A – Price Proposal** that will provide an annual fixed fee, inclusive of all travel, clerical, printing, administrative and overhead expenses for each of the annual periods.

G) Additional Information

Please provide any additional information, not specifically requested, but which you believe would be useful to the City in evaluating your proposal.

H) Attachments

Attachments A- F

- “A” - Price Proposal
- “B” - Certificate of Authority
- “C” - Attestation
- “D” - 2008 Valuation Report
- “E” - 2008 Workers Compensation Study
- “F” - Post Retirement Analysis

END OF SECTION

ATTACHMENT – A

RFP #09-47 ACTUARIAL SERVICES PRICE PROPOSAL

- A. The undersigned proposes to supply and deliver the services specified below in full accordance with the Contract Documents and Project Manual supplied by the City of Newton entitled:

ACTUARIAL SERVICES

for the contract price(s) specified below, subject to additions and deductions according to the terms of the specifications.

- B. This proposal includes addenda number(s) _____.
- C. The proposal proposes to furnish and deliver the materials specified at the following price(s):

Retirement System

January 1, 2009	\$ _____
January 1, 2010	\$ _____
January 1, 2011	\$ _____
January 1, 2012	\$ _____
January 1, 2013	\$ _____

Post Retirement Health Benefits

June 30, 2009	\$ _____
June 30, 2010	\$ _____
June 30, 2011	\$ _____
June 30, 2012	\$ _____
June 30, 2013	\$ _____

Workers Compensation Benefits

June 30, 2009	\$ _____
June 30, 2010	\$ _____
June 30, 2011	\$ _____
June 30, 2012	\$ _____
June 30, 2013	\$ _____

D. The undersigned has completed and submits herewith the following documents:

Price Proposal
Attachments A, B, C, D, E, F

E. The undersigned agrees that, if selected as contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the City of Newton, execute a contract in accordance with the terms of this bid. The undersigned hereby certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that's/he will comply fully with all laws and regulations applicable to awards made subject to M.G.L. Chapter 30B.

The undersigned further certifies under the penalties of perjury that this bid has been made and submitted in good faith and without collusion or fraud with any other person. As used in this section the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group of individuals. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from public contracting or subcontracting in the Commonwealth under the provisions of M.G.L. Chapter 29, Section 29F or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Date _____
(Name of Bidder)
BY: _____
(Printed Name and Title of Signatory)
(Business Address)
(City, State Zip)
_____/_____
(Telephone) (FAX)
(E-mail address)

NOTE: If the bidder is a corporation, indicate state of incorporation under signature, and affix corporate seal; if a partnership, give full names and residential addresses of all partners; if an individual, give residential address if different from business address; and, if operating as a d/b/a give full legal identity. Attach additional pages as necessary.

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee club, or other organization, entity, or group or individuals.

Name of person signing bid or proposal

Name of Business Entity (if any)

ATTACHMENT – B

CERTIFICATE OF AUTHORITY - CORPORATE

1. I hereby certify that I am the Clerk/Secretary of _____
(insert full name of Corporation)
2. corporation, and that _____
(insert the name of officer who signed the **contract and bonds.**)
3. is the duly elected _____
(insert the title of the officer in line 2)
4. of said corporation, and that on _____
(insert a date that is ***ON OR BEFORE*** the date the officer signed the **contract and bonds.**)

at a duly authorized meeting of the Board of Directors of said corporation, at which all the directors were present or waived notice, it was voted that

5. _____ the _____
(insert **name** from line 2) (insert **title** from line 3)

of this corporation be and hereby is authorized to execute contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

6. ATTEST: _____ *AFFIX CORPORATE*
(Signature of **Clerk or Secretary**)* *SEAL HERE*
7. Name: _____
(Please print or type name in line 6)*
8. Date: _____
(insert a date that is ***ON OR AFTER*** the date the officer signed the **contract and bonds.**)

* The name and signature inserted in lines 6 & 7 **must** be that of the **Clerk or Secretary** of the corporation.

ATTACHMENT – C

ATTESTATION

Pursuant to MG c. 62C, § 49A, the undersigned acting on behalf of the Contractor, certifies under the penalties of perjury that, to the best of the undersign's knowledge and belief, the Contractor is in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.*

**Signature of Individual
or Corporate Contractor (Mandatory)

*** Contractor's Social Security Number
(Voluntary) or Federal Identification Number

By: _____
Corporate Officer
(Mandatory, if applicable)

Date: _____

* The provision in the Attestation relating to child support applies only when the Contractor is an individual.

** Approval of a contract or other agreement will not be granted unless the applicant signs this certification clause.

*** Your social security number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended. This request is made under the authority of GL c. 62C, § 49A.

ATTACHMENT – D

**CITY OF NEWTON
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2008

TABLE OF CONTENTS

	<u>Page</u>
REPORT SUMMARY	
Highlights	1
Introduction	2
Actuarial Experience	3
ACTUARIAL COSTS AND LIABILITIES	
Normal Costs	4
Present Value of Actuarial Accrued Liabilities	5
Present Value of Future Benefits	6
FUNDED STATUS AND APPROPRIATIONS	
Market Value of Plan Assets	7
Actuarial Value of Assets	8
Unfunded Actuarial Accrued Liabilities	9
Appropriations	10
Appropriation Forecast	11
GASB Statements No. 25 and No. 27	13
PERAC Annual Statement	14
EXHIBITS	
1 Age/Service Distribution with Salary	16
2 Retiree Distribution	17
3 Disabled Retiree Distribution	18
4 Distribution Forecast	19
5 Summary of Plan Provisions	20
6 Actuarial Methods and Assumptions	27
7 Glossary of Terms	31
CERTIFICATION	33
BREAKOUTS	34

Report Summary:

<u>Highlights</u>	<u>January 1, 2007</u>	<u>January 1, 2008</u>
<u>Contributions</u>		
Funding Schedule FY 2009	\$12,843,635	\$12,843,634
Funding Schedule FY 2010	13,316,959	13,547,778
<u>Funded Ratios</u>		
GAS No. 25	66.1%	67.1%
<u>Participants</u>		
Actives	1,682	1,764
Retirees and Beneficiaries	1,143	1,143
Inactives	598	591
Disabled	<u>156</u>	<u>149</u>
Total	3,579	3,647
<u>Payroll</u>		
Payroll of Active Members	\$74,197,265	\$79,205,738
Average Payroll	44,113	44,901
<u>Normal Cost</u>		
Employer	2,792,077	3,063,306
Employee	<u>5,981,441</u>	<u>6,457,363</u>
Total	8,773,518	9,520,669
<u>Actuarial Accrued Liabilities</u>		
Actives	174,596,731	183,332,121
Retirees, Beneficiaries, Disabilities and Inactives	<u>227,660,914</u>	<u>235,668,576</u>
Total	402,257,645	419,000,697
<u>Actuarial Value of Assets</u>		
	<u>265,700,539</u>	<u>281,114,591</u>
<u>Unfunded Actuarial Accrued Liabilities</u>		
	\$136,557,106	\$137,886,106

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2008, of Newton Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2008.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the City of Newton Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2008.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability increased by 0.97% to \$137,886,106. The relatively small increase is the result of net favorable actuarial experience during the preceding year. The actuarial value of assets for 2007 had a return of 8.83%. The sources of the (gain)/loss are as follows:

Investment	(2,167,358)
Salary Increases	816,117
New Participants	427,456
Active - Retirements	(506,299)
Active - Terminations	1,890
Active - Mortality	(110,176)
Active - Disabilities	794,615
Inactive - Mortality and data adjustments	2,164,944
Contribution Gain	(1,632,363)
Other	(421,647)
Total (gain)/loss	(632,821)

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

	Table I	
	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Superannuation	\$6,294,379	\$6,855,718
Termination	1,137,040	1,241,503
Death	395,026	427,196
Disability	947,073	996,252
 Total Normal Cost	 8,773,518	 9,520,669
% of Pay	11.8%	12.0%
 Employee Contributions	 5,981,441	 6,457,363
% of Pay	8.1%	8.2%
 Employer Normal Cost	 \$2,792,077	 \$3,063,306
% of Pay	3.8%	3.9%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Actives		
Superannuations	\$164,786,280	\$173,364,354
Termination	(2,618,057)	(2,743,827)
Death	4,166,763	4,295,527
Disability	8,261,745	8,416,067
Retirees and Inactives		
Retirees and Beneficiaries	178,158,864	185,271,031
Terminated (Refund)	2,926,495	3,300,113
Disabled	<u>46,575,555</u>	<u>47,097,432</u>
Total	\$402,257,645	\$419,000,697

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III		
	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Actives		
Superannuation	\$219,422,841	\$232,873,013
Termination	7,045,474	7,845,970
Death	7,522,023	7,929,107
Disability	17,650,879	18,328,470
Retirees and Inactives		
Retirees and Beneficiaries	178,158,864	185,271,031
Terminated (Refund)	2,926,495	3,300,113
Disabled	<u>46,575,555</u>	<u>47,097,432</u>
Total	\$479,302,131	\$502,645,136

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Cash equivalents	\$3,213,691	\$2,755,828
Short term investments	65	0
Fixed income securities	52,787,765	0
Equities	139,559,318	0
International	36,620,803	0
Real Estate	21,229,685	13,924,762
PRIT Core Fund	0	270,587,597
Other	13,366,560	0
Accounts receivable	377,912	378,230
Accounts payable	(209,957)	(29,752)
Accrued income	<u>0</u>	<u>0</u>
Total Market Value	\$266,945,842	\$287,616,666
Total Actuarial Value	\$265,700,539	\$281,114,591

Actuarial Value of Assets

For actuarial purposes, the assets are valued using a method which reflects the market value of assets through gradual recognition of any unrealized appreciation or depreciation in assets beyond the 8% return. The following table shows the development of valuation assets:

(1) Assets for valuation purposes, January 1, 2007	\$265,700,539
(2) Cash flow during year without regard to investment income and expenses	
(a) Benefit payouts and refunds	(\$27,122,386)
(b) City contributions	\$11,577,735
(c) Member contributions	\$6,689,060
(d) Net transfers and reimbursements	<u>\$1,154,293</u>
(e) Net cash flow	(\$7,701,297)
(3) Expected investment income and expenses	\$20,947,991
(4) Preliminary Asset Value (1 + 2 + 3)	\$278,947,233
 (5) Market value, January 1, 2008	 \$287,616,666
(6) Preliminary asset value	<u>\$278,947,233</u>
(7) Unrecognized appreciation (5 - 6)	\$8,669,432
(8) Adjustment (7 x 25%)	\$2,167,358
 (9) Adjusted asset value (4 + 8)	 \$281,114,591
(10) Assets for valuation purposes, January 1, 2008 (adjusted asset value limited to 120% of market value of assets)	\$281,114,591
 (11) Ratio of actuarial value to market value	 97.7%
 (12) The investment rate of return for year ending, January 1, 2008 (based on the adjusted asset value)	 8.83%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI		
	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Actuarial Accrued Liability	\$402,257,645	\$419,000,697
Actuarial Assets	<u>265,700,539</u>	<u>281,114,591</u>
Unfunded Actuarial Accrued Liability	\$136,557,106	\$137,886,106
Funded Status	66.1%	67.1%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2028
\$ 137,886,106 over 20 years with 4.5% increasing payments
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII		
	<u>January 1, 2007</u>	<u>January 1, 2008</u>
Normal cost	\$2,792,077	\$3,063,306
Amortization payment of the prior accrued liability	8,862,629	9,259,840
Total cost	\$11,654,706	\$12,323,146
% of Pay	15.7%	15.6%
Fiscal 2009 cost	\$12,843,635	\$12,843,634
Fiscal 2010 cost	\$13,316,959	\$13,547,778

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 20 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 16.2% of payroll, decreasing to 14.0% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 1.6% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast

Fiscal Year		Employee	Employer	Amortization	Employer	Employer	
		Employee	Normal Cost	Payments	Total Cost	Total Cost	Funded
Ending	Payroll*	Contribution	with Interest	with Interest	with Interest	% of Payroll	Ratio %**
2009	\$79,205,738	\$6,457,363	\$3,244,724	\$9,598,910	\$12,843,634	16.2	67.1
2010	\$82,769,996	\$6,850,203	\$3,282,423	\$10,265,355	\$13,547,778	16.4	68.0
2011	\$86,494,646	\$7,265,321	\$3,316,943	\$10,727,296	\$14,044,239	16.2	68.9
2012	\$90,386,905	\$7,703,929	\$3,347,924	\$11,210,024	\$14,557,948	16.1	69.8
2013	\$94,454,316	\$8,167,300	\$3,374,976	\$11,714,475	\$15,089,451	16.0	70.9
2014	\$98,704,760	\$8,656,773	\$3,397,683	\$12,241,627	\$15,639,310	15.8	71.9
2015	\$103,146,474	\$9,173,760	\$3,415,600	\$12,792,500	\$16,208,100	15.7	73.1
2016	\$107,788,066	\$9,719,746	\$3,428,249	\$13,368,162	\$16,796,411	15.6	74.3
2017	\$112,638,529	\$10,296,294	\$3,435,119	\$13,969,730	\$17,404,849	15.5	75.6
2018	\$117,707,262	\$10,905,048	\$3,435,666	\$14,598,368	\$18,034,034	15.3	77.1
2019	\$123,004,089	\$11,547,741	\$3,429,306	\$15,255,294	\$18,684,600	15.2	78.6
2020	\$128,539,273	\$12,226,193	\$3,415,416	\$15,941,782	\$19,357,198	15.1	80.2
2021	\$134,323,540	\$12,942,322	\$3,393,331	\$16,659,163	\$20,052,494	14.9	82.0
2022	\$140,368,100	\$13,698,144	\$3,362,343	\$17,408,825	\$20,771,168	14.8	83.8
2023	\$146,684,664	\$14,495,782	\$3,321,694	\$18,192,222	\$21,513,916	14.7	85.8
2024	\$153,285,474	\$15,337,469	\$3,270,579	\$19,010,872	\$22,281,451	14.5	87.9
2025	\$160,183,320	\$16,225,553	\$3,208,136	\$19,866,361	\$23,074,497	14.4	90.1
2026	\$167,391,570	\$17,162,507	\$3,133,451	\$20,760,348	\$23,893,799	14.3	92.5
2027	\$174,924,191	\$18,150,930	\$3,045,547	\$21,694,563	\$24,740,110	14.1	94.9
2028	\$182,795,779	\$19,193,557	\$2,943,387	\$22,670,819	\$25,614,206	14.0	97.4
2029	\$191,021,589	\$20,057,267	\$3,075,840	\$0	\$3,075,840	1.6	100.0
2030	\$199,617,561	\$20,959,844	\$3,214,253	\$0	\$3,214,253	1.6	100.0
2031	\$208,600,351	\$21,903,037	\$3,358,894	\$0	\$3,358,894	1.6	100.0
2032	\$217,987,367	\$22,888,674	\$3,510,044	\$0	\$3,510,044	1.6	100.0
2033	\$227,796,798	\$23,918,664	\$3,667,996	\$0	\$3,667,996	1.6	100.0
2034	\$238,047,654	\$24,995,004	\$3,833,056	\$0	\$3,833,056	1.6	100.0
2035	\$248,759,799	\$26,119,779	\$4,005,544	\$0	\$4,005,544	1.6	100.0
2036	\$259,953,990	\$27,295,169	\$4,185,793	\$0	\$4,185,793	1.6	100.0
2037	\$271,651,919	\$28,523,451	\$4,374,154	\$0	\$4,374,154	1.6	100.0
2038	\$283,876,255	\$29,807,007	\$4,570,991	\$0	\$4,570,991	1.6	100.0
2039	\$296,650,687	\$31,148,322	\$4,776,685	\$0	\$4,776,685	1.6	100.0
2040	\$309,999,968	\$32,549,997	\$4,991,636	\$0	\$4,991,636	1.6	100.0

* Calendar basis

** Beginning of Fiscal Year

GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2007</u>	<u>January 1, 2008</u>
(1) Actuarial Accrued Liability	\$402,257,645	\$419,000,697
(2) Actuarial Value of Assets	<u>265,700,539</u>	<u>281,114,591</u>
(3) Unfunded Actuarial Accrued Liability	136,557,106	137,886,106
(4) Funded Ratio (2)/(1)	66.1%	67.1%
(5) Covered Payroll	\$74,197,265	\$79,205,738
(6) UAAL as a percentage of payroll: (3)/(5)	184.0%	174.1%
(7) Annual Required Contribution (ARC)	\$11,747,762	\$12,843,634
(8) Net Pension Obligation	\$0	\$0

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2008.

The normal cost for employees on that date was:	\$6,457,363	8.2% of pay
The normal cost for the employer was:	3,063,306	3.9% of pay

The actuarial liability for active members was:	\$183,332,121
The actuarial liability for retired members was:	235,668,576
Total actuarial accrued liability:	419,000,697
System assets as of that date:	281,114,591
Unfunded actuarial accrued liability:	\$137,886,106

The ratio of system's assets to total actuarial liability was	67.1%
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.0%
Rate of Salary Increase:	4.75%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
01/01/08	\$281,114,591	\$419,000,697	\$137,886,106	67.1%	\$79,205,738	174.1%
01/01/07	265,700,539	402,257,645	136,557,106	66.1%	74,197,265	184.0%
01/01/06	253,420,995	382,732,277	129,311,282	66.2%	71,278,135	181.4%
01/01/05	244,266,000	361,080,000	116,814,000	67.6%	69,702,000	168.0%
01/01/04	233,888,000	350,688,000	116,800,000	66.7%	68,327,000	171.0%
01/01/03	227,126,000	338,172,000	111,046,000	67.2%	64,636,000	172.0%
01/01/02	228,239,000	306,123,000	77,884,000	74.6%	61,438,000	127.0%
01/01/01	219,102,000	268,660,000	49,558,000	81.6%	60,769,000	82.0%
01/01/00	201,766,000	256,096,000	54,330,000	78.8%	54,975,000	99.0%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2008

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	75	0	0	0	0	0	0	0	0	0	75
	23,072	0	0	0	0	0	0	0	0	0	23,072
25-29	221	19	0	0	0	0	0	0	0	0	240
	30,992	49,875	0	0	0	0	0	0	0	0	32,487
30-34	92	55	2	0	0	0	0	0	0	0	149
	39,436	48,269	58,556	0	0	0	0	0	0	0	42,953
35-39	57	60	20	1	0	0	0	0	0	0	138
	39,390	55,006	59,304	9,750	0	0	0	0	0	0	48,851
40-44	43	43	34	19	11	1	0	0	0	0	151
	33,194	48,342	57,515	52,858	55,178	57,410	0	0	0	0	47,220
45-49	57	47	30	26	44	10	0	0	0	0	214
	34,559	40,056	51,593	55,808	60,949	58,353	0	0	0	0	47,274
50-54	63	39	18	31	60	38	11	1	0	0	261
	36,748	38,033	46,460	60,366	60,108	68,061	65,906	37,039	0	0	51,574
55-59	35	51	37	28	21	25	32	20	0	0	249
	38,087	37,255	45,455	54,114	51,395	63,748	58,379	59,705	0	0	48,857
60-64	26	24	27	27	21	16	26	27	3	0	197
	36,896	38,523	41,394	49,379	54,069	54,203	71,128	65,844	51,986	0	51,373
65-69	6	11	12	8	14	7	5	0	1	0	64
	36,263	40,278	35,492	36,970	33,365	48,292	57,815	0	47,914	0	39,445
70+	0	1	4	5	5	5	0	1	5	0	26
	0	2,843	32,612	41,668	45,368	32,602	0	38,837	49,778	0	39,200
Total Employees	675	350	184	145	176	102	74	49	9	0	1,764
Average Salary	33,593	44,622	48,905	53,027	55,704	60,679	63,939	62,199	50,307	0	44,901

Retiree Distribution as of January 1, 2008

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
<20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	1	1	0	5880	5880
35-39	0	1	1	0	7355	7355
40-44	0	1	1	0	7,722	7,722
45-49	0	3	3	0	19,945	19,945
50-54	6	6	12	149,997	70,539	220,537
55-59	32	19	51	1,018,057	282,012	1,300,070
60-64	88	53	141	2,992,768	908,087	3,900,855
65-69	94	66	160	3,105,321	937,621	4,042,942
70-74	61	97	158	1,942,186	1,687,567	3,629,753
75-79	82	94	176	1,917,519	1,315,009	3,232,527
80-84	84	133	217	1,778,893	1,620,248	3,411,323
85-89	32	110	142	499,415	1,115,361	1,614,776
90-94	12	47	59	170,080	354,931	525,011
95-99	2	19	21	4,778	149,232	154,010
Total	493	650	1143	13,579,014	8,481,509	22,060,523
Average (Age/Payment)	72.6	77.8	75.6	27,544	13,048	19,301
Frequency Percent	43.1	56.9	100	61.6	38.4	100

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Disabled Retiree Distribution as of January 1, 2008

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
<20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	47,645	0	47,645
40-44	3	0	3	82,704	0	82,704
45-49	4	3	7	158,406	84,821	243,227
50-54	12	3	15	407,145	77,431	484,576
55-59	20	2	22	718,604	61,310	779,914
60-64	32	0	32	1,049,531	0	1,049,531
65-69	19	0	19	759,633	0	759,633
70-74	25	1	26	583,822	883	584,704
75-79	17	0	17	430,890	0	430,890
80-84	5	0	5	51,368	0	51,368
85-89	2	0	2	39,358	0	39,358
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	140	9	149	4,329,107	224,444	4,553,552
Average (Age/Payment)	65.2	53.5	64.5	30,922	24,938	30,561
Frequency Percent	94	6	100	95.1	4.9	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2008	\$28,035,818	\$6,457,363	\$12,843,634	\$22,371,262	\$13,636,441
2009	29,420,967	6,850,203	13,547,778	23,223,586	14,200,600
2010	30,810,743	7,265,321	14,044,239	24,347,338	14,846,155
2011	32,205,157	7,703,929	14,557,948	25,524,737	15,581,457
2012	33,610,265	8,167,300	15,089,451	26,762,837	16,409,323
2013	34,919,336	8,656,773	15,639,310	28,073,346	17,450,093
2014	36,220,691	9,173,760	16,208,100	29,469,955	18,631,124
2015	37,451,584	9,719,746	16,796,411	30,966,474	20,031,048
2016	38,666,876	10,296,294	17,404,849	32,578,400	21,612,666
2017	39,830,863	10,905,048	18,034,034	34,321,808	23,430,026
2018	40,962,658	11,547,741	18,684,600	36,214,957	25,484,641
2019	42,046,060	12,226,193	19,357,198	38,277,622	27,814,953
2020	43,066,528	12,942,322	20,052,494	40,532,592	30,460,880
2021	43,937,513	13,698,144	20,771,168	43,008,683	33,540,482
2022	44,724,240	14,495,782	21,513,916	45,738,213	37,023,672
2023	45,321,039	15,337,469	22,281,451	48,757,804	41,055,685
2024	45,908,472	16,225,553	23,074,497	52,104,478	45,496,056
2025	46,447,350	17,162,507	23,893,799	55,812,651	50,421,606
2026	46,908,232	18,150,930	24,740,110	59,922,512	55,905,320
2027	47,329,240	19,193,557	25,614,206	64,477,450	61,955,973
2028	47,616,829	20,057,267	3,075,840	69,085,107	44,601,385
2029	47,966,884	20,959,844	3,214,253	72,714,406	48,921,619
2030	48,205,068	21,903,037	3,358,894	76,697,084	53,753,947
2031	48,295,505	22,888,674	3,510,044	81,075,668	59,178,881
2032	48,410,614	23,918,664	3,667,996	85,890,960	65,067,006
2033	48,387,616	24,995,004	3,833,056	91,186,568	71,627,012
2034	48,320,296	26,119,779	4,005,544	97,012,734	78,817,761
2035	48,210,724	27,295,169	4,185,793	103,420,021	86,690,259
2036	48,181,355	28,523,451	4,374,154	110,458,351	95,174,601
2037	49,798,496	29,807,007	4,570,991	118,115,423	102,694,925

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2008, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. **Service Retirement**

a. **Eligibility:**

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

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b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at Retirement	Percentage of Average Salary		
	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement**a. Eligibility:**

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability**a. Eligibility:**

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$648.48 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability**a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits**a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2008.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at of 3% per year for 2008, 4% per year from 2009 to 2012. Starting in 2013 the annual increases will be 4.75% and 5.25% for groups 1 and 4, respectively.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). Actuarial assets equal preliminary asset value plus 25% of the difference between market value and preliminary asset value. Preliminary asset value is the previous years' actuarial asset amount increased by net cash flow and expected investment income. The result must be within 20% of market value.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

No provision is made for anticipated administrative expenses.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the City of Newton Retirement System contributing as of January 1, 2008, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC



Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 08-4086

May 2008

BREAKOUTS

Breakouts

Code	Department	Participants	Payroll	Normal Cost	Amortization of Unfunded Liability	FYE 2010 Appropriation
001	M.I.S.	8	\$ 578,621	\$ 22,868	\$ 76,123	\$ 98,991
002	Personnel	8	539,696	21,330	54,039	75,369
003	Human Services	8	441,397	17,445	36,855	54,300
005	Jackson Homestead	4	185,642	7,337	8,937	16,274
006	Executive	6	545,300	21,551	50,097	71,648
007	Comptroller	5	350,270	13,843	65,110	78,953
008	Retirement	2	166,454	6,578	33,089	39,667
009	Assessing	16	1,078,874	42,639	154,529	197,168
010	Purchasing	7	346,147	13,680	19,206	32,886
011	Treasury	10	534,293	21,116	51,577	72,693
012	Law	10	815,857	32,244	116,480	148,724
013	City Clerk	7	349,050	13,795	34,994	48,789
014	Clerk of the Board	5	249,061	9,843	27,933	37,776
015	Board of Aldermen	19	185,250	7,321	23,653	30,974
016	Building (Group 1)	20	1,172,582	46,342	224,807	271,149
016	Building (Group 2 & 4)	3	154,224	7,173	21,082	28,255
017	Elections	5	295,876	11,693	38,264	49,957
018	Planning	14	851,994	33,672	77,613	111,285
018F	Community Development	14	868,523	34,325	141,260	175,585
019	Fire (Group 1)	1	55,839	2,207	4,322	6,529
019	Fire (Group 2 & 4)	184	11,272,011	524,276	1,822,338	2,346,614
019A	Fire - Civilian Personnel	5	268,886	10,627	58,858	69,485
020	Police (Group 2 & 4)	141	10,202,942	474,552	1,898,208	2,372,760

Breakouts

Code	Department	Participants	Payroll	Normal Cost	Amortization of Unfunded Liability	FYE 2010 Appropriation
020A	Police - Civilian Personnel (Group 1)	31	\$ 1,583,912	\$ 62,598	\$ 161,650	\$ 224,248
021	Police School Traffic Supervisors	17	400,969	15,847	93,034	108,881
023	Inspectional Services (Group 1)	10	650,936	25,726	73,471	99,197
023	Inspectional Services (Group 2 & 4)	2	131,436	6,113	34,680	40,793
025	Health	39	1,916,231	75,732	202,534	278,266
026	Veterans	3	196,464	7,765	35,212	42,977
027	Library	68	3,044,736	120,332	498,308	618,640
028	School Custodian	86	4,096,345	161,893	607,425	769,318
029	School Cafeteria	75	1,248,244	49,332	132,572	181,904
030	School Teacher Aides	543	14,592,756	576,722	570,332	1,147,054
031	School Clerical	120	6,410,712	253,360	816,453	1,069,813
031A	School Committee	3	14,625	578	1,979	2,557
032	Recreation	33	1,854,409	73,289	407,808	481,097
032A	Recreation - Judy Anderson	1	49,019	1,937	9,808	11,745
033	Engineering	14	983,226	38,858	134,612	173,470
034	Public Works	124	5,886,379	232,638	848,260	1,080,898
034A	Storm Water Management	5	250,745	9,912	46,352	56,264
034B	Man.Highway Crew	6	239,993	9,485	1,742	11,227
035	Water/Sewer	18	986,822	39,001	84,126	123,127
035S	Sewer Personnel	25	1,113,768	44,018	173,717	217,735
035W	Water Personnel	21	947,668	37,453	151,939	189,392
036	Newton Housing Authority	18	1,097,554	43,377	139,967	183,344
TOTAL		1,764	\$ 79,205,738	\$ 3,282,423	\$ 10,265,355	\$ 13,547,778

ATTACHMENT – E

CITY OF NEWTON

SELF INSURED
WORKERS COMPENSATION
FUNDING STUDY

AS OF JUNE 30, 2008

SEPTEMBER 12, 2008

FINANCIAL RISK ANALYSTS



September 12, 2008

Mr. David C. Wilkinson
Comptroller
City of Newton
Commonwealth Avenue and Walnut St.
Newton Centre, MA 02159

Dear David:

Enclosed you will find our report regarding the City's self funded Workers Compensation program as of June 30, 2008. Projected ultimate losses are very consistent with last year's results.

It has been a pleasure being of service again to the City. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink that reads "Robert W. Van Epps".

Robert W. Van Epps, FCAS, MAAA
Principal

442 South Main Street, Suite 22
Davidson, NC 28036
(704) 895-9765 Fax (866) 831-3389

CITY OF NEWTON

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	2
CONDITIONS AND LIMITATIONS.....	3
DISTRIBUTION AND USE	6
SUMMARY AND CONCLUSIONS	7
ANALYSIS.....	9
EXHIBITS	

FINANCIAL RISK ANALYSTS

CITY OF NEWTON

INTRODUCTION

Financial Risk Analysts, LLC has been retained by the City of Newton (the City) to provide actuarial services regarding its self funded Workers Compensation program. The City has been fully self-funded on a pay as you go basis since at least 1956. Claims are handled by the City's Personnel Department which administers and processes benefits payments. Excess Workers Compensation coverage is not purchased and the City therefore assumes unlimited exposure to loss.

Financial Risk Analysts has been retained to provide indicated liability levels for the City's self funded Workers Compensation losses as of June 30, 2008. In addition, we have been requested to provide an indicated contribution to the self insurance fund for the one year period beginning July 1, 2008.

CITY OF NEWTON

CONDITIONS AND LIMITATIONS

GENERAL

Throughout this report and its exhibits the term "loss" is used to refer to both losses and allocated loss adjustment expenses (ALAE). ALAE provides for all expenses associated with the handling and settling of claims that can be directly attributable to a particular claim. Such expenses typically include claim handling fees, legal fees, investigatory expenses, medical reports, expert witness fees, rehabilitation costs, etc. No other costs associated with the City's self insured Workers Compensation program other than losses and ALAE have been considered in this report.

DATA

In this report we have used historical data and other information provided to us by the City of Newton. This data consist primarily of historical loss and exposure information for the City. In addition we have relied on various oral representations made to us by employees of the City. Although the data supplied have been reviewed for purposes of reasonability, we have not independently audited or verified this information and we assume it to be accurate and complete.

The results of our analysis will be contingent upon the reliability of the information supplied to us and such reliability is the responsibility of the City. Should the City become aware of any significant discrepancies in the data reported to us we should be notified of such discrepancies and this report will be amended, if necessary.

We were provided with the following data:

- Accident year losses paid during fiscal years 1988-2008 for General Government employees. Losses paid prior to 1988 were not provided to us. The term "accident year" refers to the year in which the accident leading to the injury took place. "Losses" refers to benefits paid for either indemnity (lost wages) or medical benefits.

CITY OF NEWTON

- Data and information for long term disability and death cases. These are referred to as "pension cases".
- Covered payroll information by class code for Fiscal Years 1992-2008 and estimated payroll for fiscal year 2009.

We have made various assumptions to adjust for any missing or incomplete data. The City should recognize, however, that given the considerable breadth and scope of its self funded program, the relatively limited data available increases the uncertainty associated with this actuarial study. The City does not fully establish case reserves for reported Workers Compensation cases. We encourage the City to establish procedures whereby such reserves are set up for all claims. This will considerably increase the accuracy of future actuarial studies and should also improve the City's ability to manage the self insurance program.

In performing our analysis we also relied on data and information obtained from insurance industry sources to supplement the actual historical data provided to us by the City. Such data include loss development patterns, loss trend factors, loss payout patterns, and benefit level changes for Massachusetts Workers Compensation.

UNCERTAINTY

Actuarial projections, by their nature, are estimates of future contingent events that cannot be known with certainty. The ultimate liability of the City for its retained losses will be subject to events that have yet to occur such as the size of future Workers Compensation awards, future economic conditions, and the propensity for workers to file claims for Workers Compensation. No assumptions have been made in this report as to any extraordinary changes in the legal, social, or judicial environment that might affect future losses.

While we believe the results presented in this report are reasonable and reflect the use of accepted actuarial principles and standards of practice, it is possible that actual future loss results of the City will differ, perhaps materially, from those projected herein. In particular, as noted previously, the lack of complete historical loss information and case reserve estimates increases

CITY OF NEWTON

the degree of uncertainty in our loss estimates. In addition, since excess coverage is not purchased, the City is exposed to unlimited losses, which further increases the uncertainty associated with our projections. Nothing in this report should be construed as a warranty or guarantee as to the adequacy of the liability estimates contained herein.

ASSET QUALITY/INVESTMENT INCOME

No attempt has been made to evaluate the quality of the invested or non invested assets supporting the loss and ALAE liabilities of the City. It has been assumed that the City's loss and ALAE liabilities are supported by creditworthy assets with minimal risk of default and/or capital loss.

In this report we present the pension case losses on a discounted basis. This is a generally accepted approach for purposes of establishing liabilities for claims with fixed and determinable payment levels. Discounted reserves reflect the time value of money and represent the present value as of June 30, 2008 of the expected future loss payments.

For purposes of discounting the pension case loss estimates we used an annual interest rate of 5.0%, as selected by the City. It is important to note that interest/appreciation earned on the assets supporting these liabilities should be credited to the self insurance fund. Alternatively, future years' contributions to the self insurance fund can be increased to offset the interest amortization. Financial Risk Analysts, LLC renders no opinion on the reasonability of the use of a 5.0% rate of return or on the ability of the City to earn at least 5.0% on the invested assets supporting the self insurance liabilities.

CITY OF NEWTON

DISTRIBUTION AND USE

This report is provided solely for the use of the City of Newton in evaluating its self funded Workers Compensation liabilities as of June 30, 2008. A copy of this report may also be provided to the City's auditors with the proviso that the report is copied in its entirety and that each party receiving a copy of this report agrees to not distribute the report to any other third party.

Distribution of this report to parties other than those referenced above is not authorized without the express written consent of Financial Risk Analysts, LLC.

CITY OF NEWTON

SUMMARY AND CONCLUSIONS

Indicated Liabilities as Of June 30, 2008

Exhibit 1.1 presents the results of our analysis by type of loss. Based upon our analysis we are recommending the following liability for expected losses as of June 30, 2008:

General Government Workers Compensation Self Insured Liability As of June 30, 2008	
Other Than Pension Cases	\$1,296,969
Pension Cases	\$4,991,672
Total Liability	\$6,288,641

The liability indication provided above is intended to provide for all General Government Workers Compensation losses incurred by the City from inception of its self funded program through June 30, 2008 under the terms and conditions of its statutory obligations.

The above liability provides for what is commonly known as "expected losses." Expected losses represent the best estimate of the City's outstanding losses as of June 30, 2008 and reflect a statistical confidence level of approximately 53%. This means there is a 53% likelihood that actual losses will be less than or equal to expected losses.

Any actuarial estimate of loss reserves is subject to inherent variability. While expected losses represent the best estimate of losses to be incurred, actual losses in any given year can be expected to differ from expected losses. Funding at expected loss levels will entail a degree of risk (47%) that reserve levels will be exceeded. If the City wishes to fund at a level with a higher degree of statistical confidence, i.e. with a lower probability of reserves being inadequate, it may wish to fund at a higher loss level than that indicated by expected losses.

CITY OF NEWTON

The liabilities indicated above include a provision for the following:

- Losses on claims that have occurred but that are not yet known and not yet reported to the City. These claims are part of the reserve provision known as *IBNR* or *Incurred But Not Reported*.
- Future loss development on known, recorded claims. This is also considered a part of the IBNR reserve.

Indicated Funding For Fiscal Year 2009

As displayed on Exhibit 1.2 we indicate the City fund \$952,619 for expected losses occurring during the period July 1, 2008 to June 30, 2009. The indicated funding level is based on estimated payroll as shown on Exhibit 1.2 of approximately \$41.4 million for General Government employees. The fiscal year 2009 funding is intended to provide solely for losses occurring during the period July 1, 2008-2009. It does not include a provision to amortize any surplus or deficit in the fund balance as of June 30, 2008. The City may wish to make an adjustment to the extent a surplus or deficit exists.

As also shown on Exhibit 1.2 we are projecting an overall pure premium of \$2.30 for fiscal year 2009. A pure premium is defined as expected losses per unit of exposure. Losses are defined as previously noted. For Workers Compensation the standard exposure unit is \$100 of payroll. No other costs or expenses associated with the operation of the self funded program are included in our estimates.

CITY OF NEWTON

ANALYSIS

BACKGROUND INFORMATION

This analysis reviews the City of Newton's self funded Workers Compensation program as of June 30, 2008. The City has been self funded for a considerable period of time. The actual inception date is unknown. The data provided to us include claims with date of loss going back to 1956. Our analysis therefore includes loss estimates for accident years 1956 through 2008. We have assumed no liability exists for years prior to 1956.

As mentioned previously, the data provided to us does not include any payments made on claims closed prior to 1988 nor does it include payments made prior to 1988 on all other claims.

ASSUMPTIONS AND METHODOLOGY

1. Indicated Outstanding Losses

We have used two commonly applied actuarial methodologies to estimate the City's outstanding indemnity losses. For medical only claims, only the paid loss development method has been used. From the results of these approaches final loss selections were made. The following is a detailed description of each of the methodologies used.

- **Paid Loss Development Method**

The paid loss development method is a method in which paid losses are projected to an ultimate level based on historical development patterns. An analysis of the changes in accident year incurred losses between various valuation points provides a basis for estimating future changes. Paid losses are projected to an ultimate level based on historical paid loss development patterns. This method assumes that loss settlement and payment patterns have remained reasonably stable over time.

CITY OF NEWTON

Paid loss development patterns have been derived from the City's own historical loss experience supplemented with insurance industry experience. Loss development factors are shown on Exhibits 5.1-5.3.

The actual historical loss experience of the City is shown on Exhibits 5.1-5.3. Because medical only claims are paid and closed in a relatively short period of time, we have been able to use the payment history provided to us by the City as the basis for making medical only claims projections.

For claims with indemnity experience displayed on Exhibits 5.1-5.2, we have had to adjust the losses to reflect the missing payments made prior to 1988. The losses have been adjusted using historical experience for the City and the industry. Adjusted losses are presented on Exhibits 5.1 and 5.2 and these are used for purposes of selecting loss development factors.

- **Bornhuetter-Ferguson Paid Loss Method**

This approach is essentially a credibility weighted average of two other reserving methods; the paid loss development method and the expected loss method. The expected loss method simply sets the indicated reserve equal to the difference between expected losses and paid losses. It produces very stable results but fails to incorporate actual results as they emerge.

The Bornhuetter-Ferguson method blends the paid loss development method and the expected loss method by splitting expected losses into two distinct pieces; expected paid losses and expected unpaid losses. As an accident year matures, the expected paid losses are replaced with actual reported losses plus expected unreported losses. Thus, as the year matures, the initial expected incurred loss estimate becomes less important while the actual paid loss experience increases in importance. In order to use this method, one must estimate both the initial expected losses and the expected loss payment pattern.

For fiscal years 2007 and 2008 initial expected indemnity losses are derived on Exhibit 3.1. They are based on results for the more recent years projected to current benefit and trend levels. Years prior to 2007 have been left unchanged from our previous analysis. Expected

CITY OF NEWTON

loss payment patterns are developed from the paid loss development factors on Exhibits 5.1 and 5.2.

We relied on the results of the Bornhuetter-Ferguson approach. The more recent years will be the most uncertain ones and will exhibit the greatest volatility. Use of the Bornhuetter-Ferguson approach will dampen this volatility and should produce more stable and reliable results. The results of this method appear on Exhibit 2.1.

Note that for both methods adjusted paid losses rather than actual paid losses have been used. Our results therefore produce a valid estimate of ultimate losses for a particular year even though payments made prior to 1988 are missing.

Pension Cases

Pension cases have been analyzed separately on Exhibit 2.3. US Life Tables 2001 Vital Statistics for Males and Females have been used to determine annuity values for these claims using a 5.0% annual rate of interest. Amortizing such claims for mortality and interest is a common practice when establishing liabilities for these types of claims.

It has been assumed for the permanent total and death claims that benefits will be payable for life. For the temporary disability claims it has been assumed that benefits will be paid for the statutory maximum eleven years.

Effective July 1, 1999 the City elected to opt out of the Massachusetts Workers Compensation Trust Fund. As a result the City's liability for pension claims increased significantly. Prior to July 1, 1999, the City's net liability for pension claims was limited to the base benefit for each claim. The base benefit is the benefit established at the time of injury. It is a function of the injured worker's salary at the time of injury.

Benefits for pension claims are subject to annual cost of living adjustments. As a participant in the Trust Fund the City was not responsible for paying cost of living adjustments. By opting out the City is now responsible for paying a benefit equal to the initial base benefit plus the

CITY OF NEWTON

accumulated cost of living adjustments. In addition, the City will be responsible for paying future cost of living adjustments. We used a 2.8% annual cost of living adjustment in the pension claim calculation. Offsetting this somewhat is the fact that the City will no longer be subject to assessment by the Trust Fund.

2. Fiscal Year 2009 Funding

Exhibit 1.2 displays recommended funding separately for non-pension indemnity and medical claims for the July 1, 2008-2009 period. Funding is determined by multiplying the pure premium in column (1) by the covered payroll in column (2). The City may wish to adjust the indicated funding if actual payroll amounts are different from those displayed on Exhibit 1.2. A provision for pension claims has also been included based on the City's historical experience for these types of claims.

Based on the payroll data provided to us, we are indicating \$952,619 for General Government employees. Overall, our analysis produces indicated funding of \$2.30 per \$100 of payroll for General Government employees. This consists of \$1.85 for non-pension indemnity claims, \$0.19 for medical only claims, and \$0.26 for pension claims.

CITY OF NEWTON

Exhibit 1.1

WORKERS COMPENSATION
INDICATED LIABILITY
AS OF JUNE 30, 2008
SUMMARY OF RESULTS

Indicated Liability As of June 30, 2008	
GENERAL GOVERNMENT	
A. Other Than Pension Claims	\$1,296,969
B. Pension Claims	\$4,991,672
C. Total	\$6,288,641

A. Exhibits 2.1 and 2.2
B. Exhibit 2.3

FINANCIAL RISK ANALYSTS

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OSSummary

CITY OF NEWTON

Exhibit 1.2

WORKERS COMPENSATION
INDICATED FUNDING
FISCAL YEAR 2009

	<u>Expected Loss Cost</u> (1)	<u>Exposure</u> (2)	<u>Expected Losses</u> (3)=(1)x(2)
<u>Non-Pension Claims</u>			
Indemnity	\$1.85	\$414,492	766,810
<u>Medical</u>	<u>\$0.19</u>	\$414,492	<u>78,753</u>
Total	\$2.04		845,563
Pension Claims			107,056
TOTAL	\$2.30		952,619

(1) Exhibits 3.1 and 3.2

(2) Exhibit 6

FINANCIAL RISK ANALYSTS

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Funding

CITY OF NEWTON

WORKERS COMPENSATION
INDEMNITY
INDICATED OUTSTANDING LOSSES
FISCAL YEARS 1988-2008

Fiscal Year (1)	Exposure (2)	Initial Expected Pure Premium (3)	Initial Expected Losses (4)=(2)x(3)	Expected Percent of Losses Paid (5)	Paid Losses	
					Actual (6)	Expected (7)=(4)x(5)
1988	\$207,265	\$4.90	\$1,015,599	100.0%	\$731,803	\$1,015,599
1989	217,129	5.16	1,120,386	100.0%	550,947	1,120,386
1990	220,084	5.39	1,186,253	100.0%	403,358	1,186,253
1991	222,813	5.00	1,114,065	100.0%	1,043,766	1,114,065
1992	226,774	4.63	1,049,964	100.0%	372,200	1,049,964
1993	233,157	4.74	1,105,164	100.0%	290,080	1,105,164
1994	253,882	4.22	1,071,382	100.0%	356,071	1,071,382
1995	256,823	4.41	1,132,589	100.0%	482,518	1,132,589
1996	270,263	4.04	1,091,863	100.0%	272,140	1,091,863
1997	282,380	2.58	728,540	100.0%	818,448	728,540
1998	287,177	2.73	783,993	100.0%	418,525	783,993
1999	309,695	2.56	792,819	100.0%	272,004	792,819
2000	314,406	1.85	581,651	99.5%	750,076	578,743
2001	322,083	1.89	608,737	98.8%	530,579	601,432
2002	354,569	1.80	638,224	97.8%	563,540	624,183
2003	362,190	1.94	702,649	96.9%	779,966	680,867
2004	362,318	1.85	670,288	95.0%	610,428	636,774
2005	365,553	2.00	731,106	86.4%	870,311	631,676
2006	378,519	2.01	760,823	73.2%	463,452	556,922
2007	405,875	2.02	819,868	62.3%	216,081	510,778
2008	415,644	1.95	810,506	30.0%	363,333	243,152
Total	\$6,268,599		\$18,516,469		\$11,159,626	\$17,257,144

Fiscal Year (1)	Expected Percent of Losses Unpaid (8)=1.0-(5)	Expected Unpaid Losses (9)=(8)x(4)	Indicated Ultimate Losses (10)=(6)+(9)	Indicated Ultimate Pure Premium (11)=(10)/(2)
1988	0.0%	\$0	\$731,803	\$3.53
1989	0.0%	0	550,947	2.54
1990	0.0%	0	403,358	1.83
1991	0.0%	0	1,043,766	4.68
1992	0.0%	0	372,200	1.64
1993	0.0%	0	290,080	1.24
1994	0.0%	0	356,071	1.40
1995	0.0%	0	482,518	1.88
1996	0.0%	0	272,140	1.01
1997	0.0%	0	818,448	2.90
1998	0.0%	0	418,525	1.46
1999	0.0%	0	272,004	0.88
2000	0.5%	2,908	752,984	2.39
2001	1.2%	7,305	537,884	1.67
2002	2.2%	14,041	577,581	1.63
2003	3.1%	21,782	801,748	2.21
2004	5.0%	33,514	643,942	1.78
2005	13.6%	99,430	969,741	2.65
2006	26.8%	203,901	667,353	1.76
2007	37.7%	309,090	525,171	1.29
2008	70.0%	567,354	930,687	2.24
Total		\$1,259,325	\$12,418,951	\$1.98

(2) Exhibit 6

(3) Exhibit 3.1 for 2007 and 2008. Prior years from 6/30/07 analysis.

(5) Reciprocal of cumulative factors from Exhibits 5.1 and 5.2.

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
IndemnityOS

CITY OF NEWTON

Exhibit 2.2

WORKERS COMPENSATION
MEDICAL ONLY
INDICATED OUTSTANDING LOSSES

<u>Fiscal</u> <u>Year</u> (1)	<u>Paid</u> <u>Losses</u> (2)	<u>Development</u> <u>Factor</u> (3)	<u>Indicated</u> <u>Ultimate</u> <u>Losses</u> (4)=(2)x(3)	<u>Indicated</u> <u>Outstanding</u> <u>Losses</u> (5)=(4)-(2)
1992	\$50,185	1.000	\$50,185	\$0
1993	55,048	1.000	55,048	0
1994	45,547	1.000	45,547	0
1995	30,253	1.000	30,253	0
1996	38,350	1.000	38,350	0
1997	52,993	1.000	52,993	0
1998	22,036	1.000	22,036	0
1999	26,164	1.000	26,164	0
2000	31,244	1.000	31,244	0
2001	52,561	1.000	52,561	0
2002	99,126	1.000	99,126	0
2003	48,174	1.000	48,174	0
2004	96,514	1.000	96,514	0
2005	54,021	1.007	54,399	378
2006	45,677	1.032	47,139	1,462
2007	63,473	1.068	67,789	4,316
2008	50,061	1.629	81,549	31,488
TOTAL	\$861,427		\$899,071	\$37,644

(2), (3) Exhibit 5.3

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
MedicalOS

CITY OF NEWTON

Exhibit 2.3

WORKERS COMPENSATION
PENSION CLAIMS**Permanent Total Disability Claims**

Claimant Name (1)	Sex (2)	Date Of Birth (3)	Nearest Age (4)	Net Weekly Benefit (5)	Annuity Factor (6)	Present Value Of Benefit (7)
Brennan, Lawrence	M	12/29/51	57	\$747.98	16.678	\$648,690
Forte, Salvatore	M	08/19/32	76	\$871.31	8.214	372,161
Gentile, Joseph	M	08/24/25	83	\$861.20	5.670	253,916
Hayes, Thomas	M	08/27/49	59	\$1,035.72	15.752	848,362
Kelly, Stephen	M	12/07/27	81	\$1,032.49	6.340	340,391
Machain, Eugene	M	12/05/36	72	\$597.31	9.859	306,222
Marchand, Kathleen	F	07/02/21	87	\$693.79	5.342	192,724
McMahon, Robert	M	09/14/44	64	\$1,011.34	13.428	706,174
Piselli, Lawrence	M	10/03/26	82	\$901.23	6.015	281,887
TOTAL						\$3,950,527

Widow Claims

Claimant Name (1)	Sex (2)	Date Of Birth (3)	Nearest Age (4)	Net Weekly Benefit (5)	Annuity Factor (6)	Present Value Of Benefit (7)
Adams, Barbara	F	12/03/38	70	\$730.42	12.547	476,558
Cardarelli, Catherine	F	08/07/48	60	\$626.62	17.327	564,587
TOTAL						\$1,041,145

Temporary Disability Claims

Claimant Name (1)	Sex (2)	Date Of Birth (3)	Nearest Age (4)	Net Weekly Benefit (5)	Annuity Factor (6)	Present Value Of Benefit (7)
TOTAL						\$0

GRAND TOTAL PENSION CASES

\$4,991,672

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
Pension

CITY OF NEWTON

Exhibit 3.1

WORKERS COMPENSATION
INDEMNITY
PROJECTED PURE PREMIUMS

Fiscal Year (1)	Selected Ultimate Losses (2)	Exposure (3)	Developed Pure Premium (4)=(2)/(3)	Benefit Level Adjust. Factor (5)	Trend Factor To 1/1/09 (6)	On Level Pure Premium (7)
2002	575,938	354,569	1.62	1.043	0.704	1.19
2003	804,925	362,190	2.22	1.040	0.740	1.71
2004	642,781	362,318	1.77	1.040	0.778	1.43
2005	1,007,820	365,553	2.76	1.033	0.818	2.33
2006	633,075	378,519	1.67	1.022	0.860	1.47
2007	346,810	405,875	0.85	1.011	0.904	0.78
2008	1,209,899	415,644	2.91	1.000	0.951	2.77
8. MEAN						1.67
9. LATEST 5						1.76
10. LATEST 3						1.67
11. BEST 3						1.74
12. SELECTED						1.85
				(13)	(14)	(15)
FORECASTED PURE PREMIUM				SELECTED	ON LEVEL FACTOR	TRENDED ON LEVEL
2007				1.85	0.914	2.02
2008				1.85	0.951	1.95
2009				1.85	1.000	1.85

- (2) Exhibit 4.1
(3) Exhibit 6
(5) Based on Massachusetts benefit level changes
(6) -4.9% annual trend based on 2008 WCRIB MA filing
(7) (4) x (5) x (6)
(14) (5) x (6)
(15) (13)/(14)

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
IndemnityPP

CITY OF NEWTON

Exhibit 3.2

WORKERS COMPENSATION
MEDICAL ONLY
PROJECTED PURE PREMIUMS

Fiscal Year (1)	Selected Ultimate Losses (2)	Exposure (3)	Developed Pure Premium (4)=(2)/(3)	Benefit Level Adjust. Factor (5)	Trend Factor To 1/1/09 (6)	On Level Pure Premium (7)
2002	99,126	354,569	0.28	1.014	0.951	0.27
2003	48,174	362,190	0.13	1.014	0.958	0.13
2004	96,514	362,318	0.27	1.014	0.965	0.26
2005	54,399	365,553	0.15	1.002	0.972	0.15
2006	47,139	378,519	0.12	1.000	0.979	0.12
2007	67,789	405,875	0.17	1.000	0.986	0.17
2008	81,549	415,644	0.20	1.000	0.993	0.20
8. MEAN						0.19
9. LATEST 5						0.18
10. LATEST 3						0.16
11. BEST 3						0.17
12. SELECTED						0.19
				(13)	(14)	(15)
FORECASTED PURE PREMIUM				2009 SELECTED	ON LEVEL FACTOR	TRENDED ON LEVEL
2009				0.19	1.000	0.19

- (2) Exhibit 4.2
(3) Exhibit 6
(5) Based on Massachusetts benefit level changes
(6) -0.7% annual trend based on 2008 WCRIB MA filing
(7) (4) x (5) x (6)
(14) (5) x (6)
(15) (13)/(14)

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
MedicalPP

CITY OF NEWTON

Exhibit 4.1

WORKERS COMPENSATION
INDEMNITY
PROJECTED ULTIMATE LOSSES

<u>Fiscal Year</u> (1)	<u>Paid Losses</u> (2)	<u>Paid LDF</u> (3)	<u>Projected Ultimate Losses</u> (4)=(2)x(3)
1998	418,525	1.000	418,525
1999	272,004	1.000	272,004
2000	750,076	1.005	753,826
2001	530,579	1.012	536,946
2002	563,540	1.022	575,938
2003	779,966	1.032	804,925
2004	610,428	1.053	642,781
2005	870,311	1.158	1,007,820
2006	463,452	1.366	633,075
2007	216,081	1.605	346,810
2008	363,333	3.330	1,209,899
TOTAL	5,838,295		7,202,549

(2),(3) Exhibits 5.1 and 5.2

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
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CITY OF NEWTON

Exhibit 4.2

WORKERS COMPENSATION
MEDICAL ONLY
PROJECTED ULTIMATE LOSSES

<u>Fiscal</u> <u>Year</u> (1)	<u>Paid</u> <u>Losses</u> (2)	<u>Paid</u> <u>LDF</u> (3)	<u>Projected</u> <u>Ultimate</u> <u>Losses</u> (4)=(2)x(3)
1998	22,036	1.000	22,036
1999	26,164	1.000	26,164
2000	31,244	1.000	31,244
2001	52,561	1.000	52,561
2002	99,126	1.000	99,126
2003	48,174	1.000	48,174
2004	96,514	1.000	96,514
2005	54,021	1.007	54,399
2006	45,677	1.032	47,139
2007	63,473	1.068	67,789
2008	50,061	1.629	81,549
TOTAL	589,051		626,695

(2),(3) Exhibit 5.3

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
MedicalLDF

CITY OF NEWTON

Exhibit 5.1

WORKERS COMPENSATION
INDEMNITY
LOSS DEVELOPMENT FACTORS

Fiscal Year	Adjusted Cumulative Paid Losses & ALAE Valued As Of (Months)								
	12	24	36	48	60	72	84	96	108
1981									13,014
1982								50,271	79,896
1983							85,974	151,711	190,854
1984						104,034	131,996	136,739	141,551
1985					47,779	73,645	97,884	112,151	145,836
1986				162,488	213,185	253,463	291,687	355,426	372,283
1987			133,598	187,011	244,851	257,161	257,537	293,215	294,936
1988		309,658	422,764	500,503	574,645	703,346	731,742	731,742	731,742
1989	125,123	302,209	400,338	495,906	533,152	543,317	543,317	543,317	543,317
1990	61,057	136,259	240,897	345,480	396,190	399,793	401,285	401,609	402,383
1991	251,479	533,452	803,595	949,121	983,668	1,004,961	1,024,987	1,034,376	1,043,766
1992	166,946	290,170	332,670	361,869	372,115	372,115	372,198	372,198	372,200
1993	168,348	257,203	286,600	290,080	290,080	290,080	290,080	290,080	290,080
1994	254,543	296,798	312,434	325,287	338,376	351,173	356,071	356,071	356,071
1995	252,219	361,516	405,680	430,313	450,416	475,482	480,425	482,220	482,406
1996	140,989	214,821	238,055	254,226	254,226	254,226	267,113	267,942	270,614
1997	201,014	508,180	623,376	672,936	762,810	784,804	792,020	802,934	803,013
1998	225,712	411,974	413,936	413,936	413,936	418,525	418,525	418,525	418,525
1999	128,424	219,499	269,989	271,972	272,004	272,004	272,004	272,004	272,004
2000	182,578	383,681	497,680	571,098	645,723	672,162	684,176	727,388	750,076
2001	242,701	439,427	504,239	517,760	529,022	530,492	530,579	530,579	
2002	211,650	381,092	463,724	555,910	555,910	563,540	563,540		
2003	184,764	400,748	477,403	622,815	747,597	779,966			
2004	326,634	446,143	482,874	559,910	610,428				
2005	224,297	642,049	817,435	870,311					
2006	227,475	429,371	463,452						
2007	157,547	216,081							
2008	363,333								
Fiscal Year	Development Factors								
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120
1981									1.577
1982								1.589	1.327
1983							1.765	1.258	1.221
1984						1.269	1.036	1.035	1.243
1985					1.541	1.329	1.146	1.300	1.034
1986				1.312	1.189	1.151	1.219	1.047	1.000
1987			1.400	1.309	1.050	1.001	1.139	1.006	1.006
1988		1.365	1.184	1.148	1.224	1.040	1.000	1.000	1.000
1989	2.415	1.325	1.239	1.075	1.019	1.000	1.000	1.000	1.000
1990	2.232	1.768	1.434	1.147	1.009	1.004	1.001	1.002	1.000
1991	2.121	1.506	1.181	1.036	1.022	1.020	1.009	1.009	1.000
1992	1.738	1.146	1.088	1.028	1.000	1.000	1.000	1.000	1.000
1993	1.528	1.114	1.012	1.000	1.000	1.000	1.000	1.000	1.000
1994	1.166	1.053	1.041	1.040	1.038	1.014	1.000	1.000	1.000
1995	1.433	1.122	1.061	1.047	1.056	1.010	1.004	1.000	1.000
1996	1.524	1.108	1.068	1.000	1.000	1.051	1.003	1.010	1.006
1997	2.528	1.227	1.080	1.134	1.029	1.009	1.014	1.000	1.019
1998	1.825	1.005	1.000	1.000	1.011	1.000	1.000	1.000	1.000
1999	1.709	1.230	1.007	1.000	1.000	1.000	1.000	1.000	0.000
2000	2.101	1.297	1.148	1.131	1.041	1.018	1.063	1.031	
2001	1.811	1.147	1.027	1.022	1.003	1.000	1.000		
2002	1.801	1.217	1.199	1.000	1.014	1.000			
2003	2.169	1.191	1.305	1.200	1.043				
2004	1.366	1.082	1.160	1.090					
2005	2.862	1.273	1.065						
2006	1.888	1.079							
2007	1.372								
Mean	1.873	1.224	1.142	1.091	1.068	1.048	1.074	1.068	0.992
3 Yr. Mean	2.041	1.145	1.176	1.097	1.020	1.006	1.021	1.010	0.673
5 Yr. Mean	1.931	1.169	1.151	1.089	1.020	1.004	1.015	1.008	0.805
Best 3	1.809	1.163	1.141	1.081	1.019	1.000	1.005	1.003	1.002
Selected	2.075	1.175	1.180	1.100	1.020	1.010	1.010	1.007	1.005
Cumulative	3.330	1.605	1.366	1.158	1.053	1.032	1.022	1.012	1.005

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
Indemnity1

CITY OF NEWTON

Exhibit 5.2

WORKERS COMPENSATION
INDEMNITY
LOSS DEVELOPMENT FACTORS

Fiscal Year	Adjusted Cumulative Paid Losses & ALAE Valued As Of (Months)												
	120	132	144	156	168	180	192	204	216	228	240	252	264
1978			21,834	21,834	21,834	21,834	21,834	21,834	21,834	21,834	21,834	21,834	21,834
1979		48,767	73,098	110,017	132,877	144,057	145,357	145,357	145,357	145,357	145,357	145,357	145,357
1980	35,296	54,135	73,763	94,286	110,435	110,435	110,435	110,435	110,435	110,435	110,435	110,435	110,435
1981	20,529	27,144	33,759	40,405	42,640	44,884	47,119	49,354	51,589	53,824	56,059	58,294	60,529
1982	106,029	122,456	140,818	159,999	160,887	160,887	160,887	160,887	160,887	160,887	160,887	160,887	160,887
1983	233,090	249,208	260,364	269,481	278,497	287,513	298,111	302,775	307,239	311,703	316,167	320,631	325,295
1984	175,886	181,486	185,599	186,549	186,549	186,549	186,549	186,549	186,549	186,549	186,549	186,549	186,549
1985	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852	150,852
1986	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283	372,283
1987	296,657	297,654	297,654	297,654	297,654	297,654	297,654	297,654	297,654	297,654	297,654	297,654	297,654
1988	731,742	731,742	731,742	731,742	731,742	731,742	731,803	731,803	731,803	731,803	731,803	731,803	731,803
1989	543,317	543,317	543,317	543,317	543,317	543,317	543,317	543,317	543,317	550,947	550,947		
1990	402,383	403,358	403,358	403,358	403,358	403,358	403,358	403,358	403,358	403,358			
1991	1,043,766	1,043,766	1,043,766	1,043,766	1,043,766	1,043,766	1,043,766	1,043,766	1,043,766				
1992	372,200	372,200	372,200	372,200	372,200	372,200	372,200	372,200	372,200				
1993	290,080	290,080	290,080	290,080	290,080	290,080	290,080						
1994	356,071	356,071	356,071	356,071	356,071	356,071							
1995	482,406	482,406	482,406	482,406	482,462	482,518							
1996	272,140	272,140	272,140	272,140									
1997	818,251	818,311	818,448										
1998	418,525	418,525											
1999	272,004												

Fiscal Year	Development Factors												
	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-Ult.
1978			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1979		1.499	1.505	1.208	1.084	1.009	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1980	1.534	1.363	1.278	1.171	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1981	1.322	1.244	1.197	1.055	1.053	1.050	1.047	1.045	1.043	1.042	1.040	1.038	1.028
1982	1.155	1.150	1.136	1.006	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1983	1.069	1.045	1.035	1.033	1.032	1.037	1.016	1.015	1.015	1.014	1.014	1.015	1.000
1984	1.032	1.023	1.005	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1985	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1986	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1987	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1988	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1989	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.014	1.000			
1990	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1991	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
1992	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
1993	1.000	1.000	1.000	1.000	1.000	1.000							
1994	1.000	1.000	1.000	1.000	1.000								
1995	1.000	1.000	1.000	1.000									
1996	1.000	1.000	1.000										
1997	1.000	1.000											
1998	1.000												
Mean	1.059	1.070	1.061	1.026	1.010	1.006	1.004	1.004	1.006	1.005	1.005	1.005	1.003
3 Yr. Mean	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000
5 Yr. Mean	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.003	1.000	1.000	1.003	1.000
Best 3	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
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CITY OF NEWTON

WORKERS COMPENSATION
MEDICAL ONLY
HISTORICAL LOSS DATA

Fiscal Year	Cumulative Paid Losses & ALAE Valued As Of (Months)										
	12	24	36	48	60	72	84	96	108	120	132
1989	16,707	23,305	23,305	23,305	23,305	23,905	23,905	23,905	23,905	23,905	23,905
1990	23,114	29,040	29,646	29,646	29,646	29,646	29,646	29,646	29,646	29,646	29,646
1991	2,960	3,346	12,650	41,187	41,187	41,187	41,187	41,187	41,187	41,187	41,187
1992	33	17,928	50,185	50,185	50,185	50,185	50,185	50,185	50,185	50,185	50,185
1993	10,419	54,025	55,048	55,048	55,048	55,048	55,048	55,048	55,048	55,048	55,048
1994	22,341	45,034	45,547	45,547	45,547	45,547	45,547	45,547	45,547	45,547	45,547
1995	22,975	30,235	30,253	30,253	30,253	30,253	30,253	30,253	30,253	30,253	30,253
1996	23,877	37,585	37,804	38,350	38,350	38,350	38,350	38,350	38,350	38,350	38,350
1997	25,033	36,553	52,993	52,993	52,993	52,993	52,993	52,993	52,993	52,993	52,993
1998	16,124	21,256	22,036	22,036	22,036	22,036	22,036	22,036	22,036	22,036	22,036
1999	21,591	25,809	26,098	26,098	26,164	26,164	26,164	26,164	26,164	26,164	
2000	20,281	30,826	30,920	31,244	31,244	31,244	31,244	31,244	31,244		
2001	30,700	48,571	48,797	52,561	52,561	52,561	52,561	52,561			
2002	39,090	98,179	98,179	98,645	98,705	98,705	99,126				
2003	40,915	47,993	48,174	48,174	48,174	48,174					
2004	50,401	83,416	85,212	93,480	96,514						
2005	35,535	50,777	54,021	54,021							
2006	29,701	45,677	45,677								
2007	50,719	63,473									
2008	50,061										

Fiscal Year	Development Factors									
	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132
1989	1.395	1.000	1.000	1.000	1.026	1.000	1.000	1.000	1.000	1.000
1990	1.256	1.021	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1991	1.130	3.781	3.256	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1992	543.273	2.799	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1993	5.185	1.019	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1994	2.016	1.011	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1995	1.316	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1996	1.574	1.006	1.014	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1997	1.460	1.450	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1998	1.318	1.037	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1999	1.195	1.011	1.000	1.003	1.000	1.000	1.000	1.000	1.000	
2000	1.520	1.003	1.010	1.000	1.000	1.000	1.000	1.000		
2001	1.582	1.005	1.077	1.000	1.000	1.000	1.000			
2002	2.512	1.000	1.005	1.001	1.000	1.004				
2003	1.173	1.004	1.000	1.000	1.000					
2004	1.655	1.022	1.097	1.032						
2005	1.429	1.064	1.000							

FINANCIAL RISK ANALYSTS

9/12/2008 12:17 PM
Medical

CITY OF NEWTON

Exhibit 6

**WORKERS COMPENSATION
EXPOSURE INFORMATION**

Fiscal Year Ending <u>June 30,</u> (1)	Covered Payroll <u>(\$00)</u> (2)
1992	226,774
1993	233,157
1994	253,882
1995	256,823
1996	270,263
1997	282,380
1998	287,177
1999	309,695
2000	314,406
2001	322,083
2002	354,569
2003	362,190
2004	362,318
2005	365,553
2006	378,519
2007	405,875
2008	415,644
2009	414,492

FINANCIAL RISK ANALYSTS9/12/2008 12:17 PM
Exposures

ATTACHMENT – F

CITY OF NEWTON

POST-RETIREMENT BENEFITS ANALYSIS
AS OF JUNE 30, 2008

AUGUST 19, 2008

FINANCIAL RISK ANALYSTS



August 19, 2008

Mr. David C. Wilkinson
Comptroller
City of Newton
Commonwealth Avenue and Walnut St.
Newton Centre, MA 02159

Dear David:

Enclosed please find our report regarding the indicated post-retirement liabilities as of June 30, 2008 for the City. The liability calculation is in accordance with Governmental Accounting Standards Board Statement 45 (GASB-45).

It has been a pleasure being of service to you again on this project. If after reviewing this report you have any questions please do not hesitate to call.

Sincerely,

Robert Van Epps, FCAS, MAAA
Principal

John D. Stiefel, FSA, MAAA
Associated Consultant

442 South Main Street, Suite 22
Davidson, NC 28036
(704) 895-9765 Fax (866) 831-3389

CITY OF NEWTON

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	2
CONDITIONS AND LIMITATIONS.....	4
DISTRIBUTION AND USE	6
REQUIRED DISCLOSURES.....	7
ANALYSIS.....	10
SCHEDULES OF EMPLOYER CONTRIBUTIONS.....	14
EXHIBITS	

FINANCIAL RISK ANALYSTS

CITY OF NEWTON

INTRODUCTION

Financial Risk Analysts, LLC has been retained by the City of Newton (the City) to provide an actuarial valuation of the City's medical and life insurance post-retirement benefits program as of June 30, 2008. The purpose of this valuation is to calculate the City's GASB-45 liability as of June 30, 2008 for these benefits. The City needs to comply with GASB-45 as of the end of its current fiscal year.

Medical and life insurance are the two most common types of other (than pension) post-retirement employee benefits (OPEB) provided by an employer to retirees and their beneficiaries.

GASB-45 requires that public entities begin accruing the expected future costs of OPEB over the expected future employment period of employees, much like they now do for pension benefits. The effective date of GASB-45 is the end of fiscal years beginning on or after December 16, 2006 for public entities with annual revenue of more than \$100 million. The effective date is one year later for public entities with annual revenue between \$10 million and \$100 million and two years later for public entities with annual revenue under \$10 million.

The City presently provides life and health insurance benefits for active and retired employees and their covered dependents. The City has reported to us 2,491 active employees, 476 pre-Medicare retirees, 1,817 Medicare retirees and 176 over age 65 non-Medicare retirees who have elected health insurance.

Health insurance benefits provided to active employees are self insured while health insurance benefits provided to Medicare retirees are fully insured. Life insurance benefits provided by the City are fully insured. For health insurance, active employees and retirees not on Medicare have a choice among the Harvard Plan, Tufts-High Option Plan and Tufts-Low Option Plan. Most

CITY OF NEWTON

retirees on Medicare are in the Tufts Medicare Complement Plan. For life insurance, the only option is a flat \$5,000 benefit which does not reduce at retirement. As required by Massachusetts law, retirees not on Medicare have the same benefit options as active employees.

A detailed description of the City's census, benefit, and premium information is presented on Exhibits 10, 11, and 12.

Additional note – the City currently reimburses 80% of the Medicare Part B premium for Medicare retirees. If the City did not do this, the Actuarial Accrued Liability (at 3.75% interest) would be 15% lower. More details of this calculation are shown on Exhibit 2.1. line C1.

CITY OF NEWTON

CONDITIONS AND LIMITATIONS

DATA

Within this report we used data and other information provided to us by the City. This data consisted of the following:

- Census Information - the demographics of the active, pre-Medicare retiree and Medicare retiree population covered for medical and life insurance benefits as of the date of the most recent pension valuation. For active employees, date of hire was also included.
- Benefit Information - a description of the different health and life insurance plans available to participants.
- Funding Information – a description of how the life and health insurance plans are funded including the contributions required from employees and retirees.
- Premium Rates – the premium rates for the various plans and the percentage of each premium rate that the City pays.
- Life Insurance In-Force Information – a summary of the life insurance schedules for actives and retirees and the participant contributions required.
- Requirements for Retirement – the age/service requirements for retirement with an unreduced pension benefit and the amount of benefit reduction for early retirement.
- Probabilities of Retirement – the probability that a general or uniformed employee eligible to retire will actually retire.
- Retirement Election Rates - The percentage of active participants who opt to continue their life and health insurance benefits (and pay the associated premiums) at retirement.

Although the data supplied were reviewed for purposes of reasonability, we have not independently audited or verified this information and we assume it to be accurate and complete. The results of our analysis will be contingent upon the reliability of the information supplied to us and such reliability is the responsibility of the City. Should the City become aware of any significant discrepancies in the data reported to us, we should be notified of such discrepancies and this report will be amended, if necessary.

CITY OF NEWTON

UNCERTAINTY

Actuarial projections, by their nature, are estimates of future contingent events, which cannot be known with certainty. The City's ultimate liability for medical and life insurance benefits will be subject to events that have yet to occur such as the future employee attrition rate, retirements, and particularly interest rates and medical cost inflation.

While we believe the results presented in this report are reasonable and reflect the use of accepted actuarial principles and standards of practice it is possible that the actual future OPEB liability of the City will differ, perhaps materially, from what we have projected herein. Nothing in this report should be construed as a warranty or guarantee as to the adequacy of the liability estimates contained herein.

CITY OF NEWTON

DISTRIBUTION AND USE

This report is provided solely for the use of the City of Newton in evaluating its OPEB liability as of June 30, 2008. A copy of this report may also be provided to the City's auditor with the proviso that the report is copied in its entirety and that each party receiving a copy of this report agrees to not distribute the report to any other third party.

We request that the City inform us of distribution of this report to parties other than those referenced above.

CITY OF NEWTON

REQUIRED DISCLOSURES

Required Information as of June 30, 2008

As displayed on Exhibit 1, the following presents a summary of the results of our analysis.

City of Newton - GASB-45 Required Disclosures		
	Discount Rate	
	3.75%	7.75%
A. Expected Post-Retirement Benefit Obligation (EPBO)	\$625.70	\$319.36
B. Funded Status		
1. Actuarial Accrued Liability		
Active Employees	\$152.89	\$62.20
Retirees	\$280.07	\$192.04
Total AAL	\$432.96	\$254.24
2. Actuarial Value of Assets	\$0.00	\$0.00
3. Unfunded Actuarial Accrued Liability (1)-(2)	\$432.96	\$254.24
4. Funded Ratio (2)/(3)	0%	0%
5. Annual Covered Payroll	\$201.97	\$201.97
6. Ratio of Unfunded AAL to Covered Payroll	2.144	1.259
C. Annual Required Contribution		
1. Normal Cost (Service Cost)	\$12.05	\$4.03
2. Amortization of Unfunded Actuarial Accrued Liability	\$23.39	\$20.46
3. Annual Required Contribution (ARC) (1)+(2)	\$35.44	\$24.49
D. OPEB Cost		
1. ARC	\$35.44	\$24.49
2. Interest on Net OPEB Obligation	\$0.00	\$0.00
3. Adjustment to ARC	\$0.00	\$0.00
4. Annual OPEB Cost (1)+(2)+(3)	\$35.44	\$24.49
E. Net OPEB Obligation		
1. Net OPEB Obligation-beginning of year	\$0.00	\$0.00
2. Annual OPEB Cost	\$35.44	\$24.49
3. Expected Contributions during the year	\$13.43	\$13.43
4. Net OPEB Obligation-end of year estimate (1)+(2)-(3)	\$22.01	\$11.06

FINANCIAL RISK ANALYSTS

7

CITY OF NEWTON

The following is an explanation of the above:

Expected Post-Retirement Benefit Obligation (EPBO)-This is the present value of the future post-retirement life and health insurance benefits for all currently retired employees and active employees eligible for those benefits. For active employees, the EPBO includes the full present value of benefits even though some employees have not yet fully earned or vested in those benefits. The City needs to be aware of this liability but does not need to disclose or recognize it on any of its financial statements.

Actuarial Accrued Liability (AAL) – This is also known as the Accumulated Post-Retirement Benefit Obligation (APBO) or the Transition Obligation. This is that portion of the EPBO that has been accrued to date. For existing retirees and active employees who have fully earned their benefit, the AAL equals the EPBO. Upon implementation of GASB-45, the APBO is the transition obligation (current liability) that must be recognized on the City's balance sheet if the City chooses immediate recognition. Alternatively, the City can choose to amortize the current APBO. GASB-45 permits amortization over a period of from 10 to 30 years.

Plan Assets – The amount of assets held in trust to fund the plan (if the plan is funded).

Unfunded Actuarial Accrued Liability – The excess of the AAL over the plan assets.

Normal Cost- Also known as the Service Cost. This is the portion of the EPBO for active employees attributable to employee service during the year. Based on discussion with the City, we used level annual Service Costs.

Amortization of Unfunded Accrued Liability -This is the annual amortization of the AAL (Transition Obligation) if the City chooses to amortize the AAL. If the City chooses to amortize the AAL, the amortization cost should be booked as a current year expense. We used a 30 year period for purposes of amortizing the AAL. This is the maximum period of time allowed under GASB and is the same as the City's pension plan requirement for retirement with an unreduced pension benefit. As with the Service Cost, we used level annual amortization payments.

CITY OF NEWTON

Annual Required Contribution (ARC)-This is the total amount that should be booked as a current year expense. During the initial year of implementation of GASB-45, ARC is equal to the sum of the Normal Cost (Service Cost) and Amortization of Actuarial Accrued Liability (Transition Obligation). GASB-45 recommends, but does not require, that the ARC actually be contributed (funded) each year.

Expected Contributions During the Year – This is the amount of OPEB payments the City is expected to make during the upcoming fiscal year.

Net OPEB Obligation – End of Year Estimate – The excess of the ARC over the Expected Benefit Payments. This represents the increase in current year cost associated with funding vs. not funding the OPEB.

CITY OF NEWTON

ANALYSIS

Assumptions

1. **Interest discount rate**-3.75% per year, net of expenses, for an unfunded plan. 7.75% per year, net of expenses, if funded. GASB-45 requires that the selection of an interest discount rate be based on the expected long term rate of return on the (General Fund) assets expected to be available to pay the benefits when due.
2. **Trend**- Medical Costs are assumed to increase each year according to the following schedule:

<u>Year</u>	<u>Medical Trend</u>
2008	7.2%
2009	7.2%
2010	7.2%
2011	7.2%
2012	7.2%
2013	7.2%
2014	7.1%
2015	7.1%
2020	6.9%
2025	6.8%
2030	6.7%
2040	6.2%
2050	5.9%
2060	5.8%
2070	5.7%
2080+	5.2%

The above trend rates were developed using the baseline projection of the SOA Long-Run Medical Cost Trend Model. These trend rates were based on the fact that the City's recent rate increase was minimal (i.e. 6 out of 9 plans had no increase) and on the following assumptions:

Rate of Inflation 3.2%
Rate of Growth in Real Income / GDP per capita 1.9%
Income Multiplier for Health Spending 1.4
Extra Trend due to Technology and other factors 1.2%
Health Share of GDP Resistance Point 25.0%
Year for Limiting Hest Growth to GDP Growth 2075

The Society of Actuaries' (SOA's) Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical US medical expenditures and the judgments of experts in the field. The long-run baseline projection and input

CITY OF NEWTON

variables have been developed under the guidance of an SOA Project Oversight Group. The above schedule represents a reasonable medical trend projection for the current plan provisions and demographics of the City's Retiree Welfare Benefits Plan, and no changes to these baseline assumptions are necessary.

We note that a level 1% increase in assumed trend will increase the City's liability by about 18%.

3. **Amortization Period**-Thirty years. This is the maximum period permitted by GASB-45. GASB-45 permits amortization payments to increase at a rate not to exceed projected salary growth. We assumed level amortization payments, which we think are more realistic for budgeting purposes.
4. **Retirement Eligibility**-As prescribed by the terms of the City's Retirement System.
5. **Marital Status**-Active participants are assumed to keep their current marital status upon retirement.
6. **Turnover**-Representative values of assumed annual turnover rates for general and uniformed employees are as follows.

Age Group	General Employees	Uniformed Employees
<20	15.00%	1.50%
20-24	13.13%	1.50%
25-29	10.12%	1.50%
30-34	8.33%	1.46%
35-39	6.78%	1.22%
40-44	5.96%	0.28%
45-49	5.13%	0.03%
50-54	3.23%	0.03%
55-59	2.45%	0.00%
60-64	2.07%	0.00%
65-69	1.94%	0.00%
70-74	1.22%	0.00%
75+	0.00%	0.00%

7. **Mortality**-Mortality assumptions are used to project the expected number of employees who will be receiving future benefits. For deaths after retirement we used mortality rates based on the RP-2000 Healthy Annuitant Table. For deaths before retirement we used representative mortality rates ranging from 0.04% at age 25 to 0.61% at age 60 for all male employees and 0.02% at age 25 to 0.48% at age 60 for all female employees.
8. **Disability**-Disability assumptions are used to project the number of people who will retire early due to disability. The possibility of disability was accounted for by assuming average retirement ages that were 1 year younger than were observed by the City (see (10) below)

CITY OF NEWTON

9. **Requirements for Retirement**-The City has informed us it requires attainment of age 65 for general employees to retire with an unreduced pension benefit. For uniformed employees this age is 55. Early retirement is available with twenty years of service with a reduced benefit. Retirement is mandatory at age 65 for uniformed employees.
10. **Age at Retirement**-Representative assumed average retirement ages are shown below. These values are consistent with the requirements for retirement stated above, the input provided by the City and the adjustment for disability retirements (see (8) above).

	General	Uniformed
<u>Age</u>	<u>Employees</u>	<u>Employees</u>
45	63	58
50	63	59
55	64	61
60	66	64
62	67	65
65	69	65
69	72	69
70	72	70

11. **Retirement Election Rates**-The City provided us data for each group showing total retirees and how many retirees have elected to continue post-retirement benefits and pay the associated premiums. That data showed that retirement election rates have been as follows.

	<u>All Employees</u>
Health Insurance	100%
Life Insurance	45%

12. **Plan Changes**-The City has informed us there are no significant changes in eligibility, plan provisions or required contributions for health or life insurance benefits that have been announced to employees for future plan years. We assumed the current benefits will remain in effect for all future years.
13. **Expenses**- We did not make an explicit assumption for expenses because our assumed interest discount rates are net of expenses.

CITY OF NEWTON

Methodology

The following is a summary of the methodology employed in our analysis.

1. Determine current annual subsidy for life and health insurance for the pre-Medicare retirees, Medicare retirees and retirees over age 65 not on Medicare. We used the most recently available census data, current premiums, participant contribution requirements and age-sex adjustment factors to make these calculations.

2. Calculate the EPBO. This is the present value of future subsidies for life and health insurance for the actives, pre-Medicare retirees, retirees over 65 not on Medicare and Medicare retirees. Separate calculations were required for active general and active uniformed employees.

3. Calculate the AAL from the EPBO and the active employee age and service information from the census.

4. Calculate the Normal Cost, Amortization of AAL, ARC (Annual Required Contribution) and Unrecognized Net Transition Obligation.

We used the Projected Unit Credit actuarial cost method to make these calculations.

CITY OF NEWTON

SCHEDULES OF EMPLOYER CONTRIBUTIONS

The schedules below are based on the normal cost and amortization of the unfunded actuarial accrued liability calculated as of June 30, 2008, future normal costs increasing at 5.0% per year and future amortization payments increasing at the assumed future healthcare trend rates. Schedules are shown for a 3.75% discount rate and a 7.75% discount rate.

Schedule of Employer Contributions (\$millions)
3.75% Discount Rate

Fiscal Year Ending in	Normal Cost	Amortization Payment	Total City ARC
2008	\$12.05	\$23.39	\$35.44
2009	\$12.65	\$25.07	\$37.73
2010	\$13.29	\$26.88	\$40.16
2011	\$13.95	\$28.81	\$42.76
2012	\$14.65	\$30.89	\$45.54
2013	\$15.38	\$33.11	\$48.49
2014	\$16.15	\$35.46	\$51.61
2015	\$16.96	\$37.98	\$54.94
2016	\$17.80	\$40.66	\$58.47
2017	\$18.69	\$43.52	\$62.21
2018	\$19.63	\$46.56	\$66.18
2019	\$20.61	\$49.79	\$70.40
2020	\$21.64	\$53.22	\$74.86
2021	\$22.72	\$56.88	\$79.61
2022	\$23.86	\$60.79	\$84.64
2023	\$25.05	\$64.94	\$90.00
2024	\$26.30	\$69.37	\$95.68
2025	\$27.62	\$74.09	\$101.71
2026	\$29.00	\$79.11	\$108.11
2027	\$30.45	\$84.46	\$114.91
2028	\$31.97	\$90.16	\$122.13
2029	\$33.57	\$96.21	\$129.78
2030	\$35.25	\$102.66	\$137.91
2031	\$37.01	\$109.49	\$146.50
2032	\$38.86	\$116.71	\$155.58
2033	\$40.81	\$124.36	\$165.16
2034	\$42.85	\$132.44	\$175.29
2035	\$44.99	\$140.98	\$185.97
2036	\$47.24	\$150.01	\$197.24
2037	\$49.60	\$159.53	\$209.13
2038	\$52.08	\$169.58	\$221.66

CITY OF NEWTON

Schedule of Employer Contributions (\$millions) 7.75% Discount Rate

Fiscal Year Ending in	Normal Cost	Amortization Payment	Total City ARC
2008	\$4.03	\$20.46	\$24.49
2009	\$4.23	\$21.93	\$26.16
2010	\$4.44	\$23.51	\$27.96
2011	\$4.67	\$25.21	\$29.87
2012	\$4.90	\$27.02	\$31.92
2013	\$5.14	\$28.97	\$34.11
2014	\$5.40	\$31.02	\$36.42
2015	\$5.67	\$33.22	\$38.90
2016	\$5.95	\$35.57	\$41.52
2017	\$6.25	\$38.07	\$44.32
2018	\$6.56	\$40.72	\$47.29
2019	\$6.89	\$43.55	\$50.44
2020	\$7.24	\$46.56	\$53.79
2021	\$7.60	\$49.76	\$57.36
2022	\$7.98	\$53.17	\$61.15
2023	\$8.38	\$56.81	\$65.19
2024	\$8.80	\$60.68	\$69.48
2025	\$9.24	\$64.81	\$74.05
2026	\$9.70	\$69.20	\$78.90
2027	\$10.18	\$73.88	\$84.07
2028	\$10.69	\$78.86	\$89.55
2029	\$11.23	\$84.16	\$95.39
2030	\$11.79	\$89.80	\$101.59
2031	\$12.38	\$95.77	\$108.15
2032	\$13.00	\$102.09	\$115.09
2033	\$13.65	\$108.78	\$122.43
2034	\$14.33	\$115.85	\$130.18
2035	\$15.05	\$123.32	\$138.37
2036	\$15.80	\$131.22	\$147.01
2037	\$16.59	\$139.55	\$156.14
2038	\$17.42	\$148.34	\$165.76

FINANCIAL RISK ANALYSTS

15

CITY OF NEWTON
GASB 45 DETERMINATION

Exhibit 1.1

REQUIRED DISCLOSURES-SUMMARY
(\$ millions)
3.75% Interest

	<u>Active</u>	<u>Retired</u>	<u>Total</u>
A. Expected Post-Retirement Benefit Obligation	\$345.63	\$280.07	\$625.70
B. Actuarial Accrued Liability	\$152.89	\$280.07	\$432.96
C. Plan Assets			\$0.00
D. Unfunded Actuarial Accrued Liability			\$432.96
E. Service Cost (Normal Cost)	\$12.05	\$0.00	\$12.05
F. Amortization of unfunded accrued liability	\$8.26	\$15.13	\$23.39
G. Annual Required Contribution (ARC)	\$20.31	\$15.13	\$35.44
H. Unrecognized Net Transition Obligation	\$144.63	\$264.94	\$409.57
I. Expected Benefit (Premium) Payments	n/a	\$13.43	\$13.43
J. Increase in Annual Cost to Fund the Plan			\$22.01

-
- A-B. Exhibit 2.1
C. Since plan is not funded, current assets = 0.
D. B - C
E-H. Exhibit 2.1
I. These are the City's share of the annual retiree premiums.
J. G - I

8/19/2008 7:22 PM
Exhibit 1.1

FINANCIAL RISK ANALYSTS

CITY OF NEWTON
GASB 45 DETERMINATION

Exhibit 1.2

REQUIRED DISCLOSURES-SUMMARY
(\$ millions)
7.75% Interest

	<u>Active</u>	<u>Retired</u>	<u>Total</u>
A. Expected Post-Retirement Benefit Obligation	\$127.32	\$192.04	\$319.36
B. Actuarial Accrued Liability	\$62.20	\$192.04	\$254.24
C. Plan Assets			\$0.00
D. Unfunded Actuarial Accrued Liability			\$254.24
E. Service Cost (Normal Cost)	\$4.03	\$0.00	\$4.03
F. Amortization of unfunded accrued liability	\$5.01	\$15.45	\$20.46
G. Annual Required Contribution (ARC)	\$9.04	\$15.45	\$24.49
H. Unrecognized Net Transition Obligation	\$57.19	\$176.59	\$233.78
I. Expected Benefit (Premium) Payments	n/a	\$13.43	\$13.43
J. Increase in Annual Cost to Fund the Plan			\$11.06

-
- A-B. Exhibit 2.2
C. Since plan is not funded, current assets = 0.
D. B - C
E-H. Exhibit 2.2
I. These are the City's share of the annual retiree premiums.
J. G - I

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Exhibit 1.2

FINANCIAL RISK ANALYSTS

CITY OF NEWTON
GASB 45 DETERMINATION

Exhibit 2.1

REQUIRED DISCLOSURES-DETAIL
(\$ millions)
3.75% Interest

	Active Employees			Retirees			Total
	General (1)	Uniformed (2)	Total (3)=(1)+(2)	Pre- Medicare (4)	Age 65+ Not on MC (5)	Medicare (6)	Total (7)=(3)+(4)+(5)+(6)
A. Number of Members Generating a Liability (Medical)	2,200	291	2,491	476	176	1,817	4,960
B. Expected Post Retirement Benefit Obligation							
Medical/Rx/Vision	\$271.09	\$74.31	\$345.40	\$128.96	\$59.07	\$89.77	\$623.20
Dental	\$0.00	\$0.00	\$0.00	\$0.00	Incl in PMR	Incl in PMR	\$0.00
Life	\$0.23	Incl in Gen	\$0.23	\$2.27	Incl in PMR	Incl in PMR	\$2.50
Total	\$271.32	\$74.31	\$345.63	\$131.23	\$59.07	\$89.77	\$625.70
C. Actuarial Accrued Liability	\$122.33	\$30.56	\$152.89	\$131.23	\$59.07	\$89.77	\$432.96
C1. Actuarial Accrued Liability if no M/C Part B Reimb.	\$99.43	\$25.13	\$124.56	\$113.49	\$59.07	\$70.33	\$367.45
D. Service Cost (Normal Cost)	\$9.70	\$2.35	\$12.05	\$0.00	\$0.00	\$0.00	\$12.05
E. Amortization Factor	18.50	18.50	18.50	18.50	18.50	18.50	18.50
F. Amortization of Actuarial Accrued Liability	\$6.61	\$1.65	\$8.26	\$7.09	\$3.19	\$4.85	\$23.39
G. Annual Required Contribution	\$16.31	\$4.00	\$20.31	\$7.09	\$3.19	\$4.85	\$35.44
H. Unamortized Portion of Actuarial Accrued Liability	\$115.72	\$28.91	\$144.63	\$124.14	\$55.88	\$84.92	\$409.57

- A. Exhibit 12
B. Exhibits 4 and 5. Dental EPBO = \$0 because there is only 1 retiree dental plan and retirees pay the full cost.
C. For retired lives AAL = EPBO. For active lives AAL = EPBO x C from Exhibit 3
C1 If the City didn't reimburse 80% of the Medicare Part B, premium, Actuarial Accrued Liability would be \$363.90.
This represents a savings of 15%
D. For retired lives Service Cost = 0. For active lives Service Cost = EPBO X D from Exhibit 3
E. Amortization factor = present value at 3.75% interest of a 30-year annuity due
F. C/E
G. D + F
H. C - F

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 2.1

CITY OF NEWTON
GASB 45 DETERMINATION

Exhibit 2.2

REQUIRED DISCLOSURES-DETAIL
(\$ millions)
7.75% Interest

	Active Employees			Retirees			Total
	General (1)	Uniformed (2)	Total (3)=(1)+(2)	Pre- Medicare (4)	Age 65+ Not on MC (5)	Medicare (6)	Total (7)=(3)+(4)+(5)+(6)
A. Number of Members Generating a Liability (Medical)	2,200	291	2,491	476	176	1,817	4,960
B. Expected Post Retirement Benefit Obligation							
Medical/Rx/Vision	\$103.42	\$23.83	\$127.25	\$82.60	\$41.66	\$66.00	\$317.51
Dental	\$0.00	\$0.00	\$0.00	\$0.00	Incl in PMR	Incl in PMR	\$0.00
Life	\$0.07	Incl in Gen	\$0.07	\$1.78	Incl in PMR	Incl in PMR	\$1.85
Total	\$103.49	\$23.83	\$127.32	\$84.38	\$41.66	\$66.00	\$319.36
C. Actuarial Accrued Liability	\$52.40	\$9.80	\$62.20	\$84.38	\$41.66	\$66.00	\$254.24
D. Service Cost (Normal Cost)	\$3.27	\$0.75	\$4.03	\$0.00	\$0.00	\$0.00	\$4.03
E. Amortization Factor	12.42	12.42	12.42	12.42	12.42	12.42	12.42
F. Amortization of Actuarial Accrued Liability	\$4.22	\$0.79	\$5.01	\$6.79	\$3.35	\$5.31	\$20.46
G. Annual Required Contribution	\$7.49	\$1.54	\$9.04	\$6.79	\$3.35	\$5.31	\$24.49
H. Unamortized Portion of Actuarial Accrued Liability	\$48.18	\$9.01	\$57.19	\$77.59	\$38.31	\$60.69	\$233.78

- A. Exhibit 12
B. Exhibits 4 and 5. Dental EPBO = \$0 because there is only 1 retiree dental plan and retirees pay the full cost.
C. For retired lives AAL = EPBO. For active lives AAL = EPBO x C from Exhibit 3
D. For retired lives Service Cost = 0. For active lives Service Cost = EPBO X D from Exhibit 3
E. Amortization factor = present value at 7.75% interest of a 30-year annuity due
F. C/E
G. D + F
H. C - F

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 2.2

CITY OF NEWTON
GASB 45 DETERMINATION

ACTIVE EMPLOYEE ACCRUED BENEFITS
 3.75% Interest

	Active Employees	
	<u>General</u>	<u>Uniformed</u>
	(1)	(2)
A. Average Projected Service at Retirement = Attribution Period	30.3	31.8
B. Weighted Average Service to Date	13.7	13.1
C. Weighted Average Percent of Retirement Benefits Accrued to Date	45.1%	41.1%
D. Percent of OPEB Accrued in Fiscal Year 2008	3.6%	3.2%

-
- A. Calculated from the census data
 B. Calculated from the census data
 C. B/A
 D. Calculated from the census data

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 3

CITY OF NEWTON
GASB 45 DETERMINATION

ACTIVE EMPLOYEE ACCRUED BENEFITS
 7.75% Interest

	Active Employees	
	General	Uniformed
	(1)	(2)
A. Average Projected Service at Retirement = Attribution Period	31.8	31.8
B. Weighted Average Service to Date	16.1	13.1
C. Weighted Average Percent of Retirement Benefits Accrued to Date	50.6%	41.1%
D. Percent of OPEB Accrued in Fiscal Year 2008	3.2%	3.2%

-
- A. Calculated from the census data
 B. Calculated from the census data
 C. B/A
 D. Calculated from the census data

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 3

CITY OF NEWTON
GASB 45 DETERMINATION

EXPECTED POST-RETIREMENT BENEFIT OBLIGATION - LIFE INSURANCE
 3.75% Interest

	<u>Active</u> (1)	<u>Retired</u> (2)	<u>Total</u> (3)=(1)+(2)
A. Number of Contracts	1,003	1,070	2,073
B. Assumed Retirement Age	63	74	
C. Average Benefit per Insured at Retirement	5,000	5,000	
D. Net Single Premium per \$1,000	489.43	649.23	
E. Discount Factor for Actives to Assumed Retirement Age	0.31	1.00	
F. Percent Electing Life Insurance at Retirement	45.1%	100.0%	
G. Percent of Actual Cost Paid by City	65.5%	65.5%	65.5%
H. Expenses	0.0%	0.0%	0.0%
I. Present Value of Future Subsidy = EPBO (\$ millions)	0.23	2.27	2.50
J. EPBO Per Contract	225.59	2,126	1,206.54

-
- A Exhibit 12
 B Exhibit 6
 C Exhibit 9
 D For actives, this is the net single premium at the assumed retirement age.
 For retirees, this is the net single premium at the current average age.
 E Based on avg current age of actives, expected retirement age, 3.75% interest and assumed mortality and turnover.
 F For actives, Exhibit 12
 G Exhibit 6
 H Expenses are 0% because the assumed interest rate is net of expenses.
 I $A \times (C/1000) \times D \times E \times F \times G \times (1+H)$
 J. 1/A

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 4.1

CITY OF NEWTON
GASB 45 DETERMINATION

EXPECTED POST-RETIREMENT BENEFIT OBLIGATION - LIFE INSURANCE
 7.75% Interest

	<u>Active</u> (1)	<u>Retired</u> (2)	<u>Total</u> (3)=(1)+(2)
A. Number of Contracts	1,003	1,070	2,073
B. Assumed Retirement Age	63	74	
C. Average Benefit per Insured at Retirement	5,000	5,000	
D. Net Single Premium per \$1,000	265.05	445.23	
E. Discount Factor for Actives to Assumed Retirement Age	0.15	1.00	
F. Percent Electing Life Insurance at Retirement	45.1%	100.0%	
G. Percent of Actual Cost Paid by City	74.7%	74.7%	74.7%
H. Expenses	0.0%	0.0%	0.0%
I. Present Value of Future Subsidy = EPBO (\$ millions)	0.07	1.78	1.85
J. EPBO Per Contract	67.88	1,662	890.92

-
- A Exhibit 12
 B Exhibit 6
 C Exhibit 9
 D For actives, this is the net single premium at the assumed retirement age.
 For retirees, this is the net single premium at the current average age.
 E Based on avg current age of actives, expected retirement age, 7.75% interest and assumed mortality and turnover.
 F For actives, Exhibit 12
 G Exhibit 6
 H Expenses are 0% because the assumed interest rate is net of expenses.
 I $A \times (C/1000) \times D \times E \times F \times G \times (1+H)$
 J. $1/A$

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 4.2

CITY OF NEWTON
GASB 45 DETERMINATION

EXPECTED POST-RETIREMENT BENEFIT OBLIGATION - MEDICAL, Rx AND VISION
 3.75% interest

	Active Employees		Retirees			Total (6)
	(1)	(2)	(3)	(4)	(5)	
	<u>General</u>	<u>Uniformed</u>	<u>Pre-Medicare</u>	<u>Age 65+ Not on MC</u>	<u>Medicare</u>	
A. Number of Contracts	2,200	291	476	176	1,817	4,960
B. Annual Subsidy per Contract	n/a	n/a	\$16,602	\$22,016	\$4,159	
C. PV of Future Subsidies (\$millions) for All Employees	\$271.09	\$74.31	\$128.96	\$59.07	\$89.77	\$623.21
D. Percent Expected to Elect Medical at Retirement	100%	100%	100%	100%	100%	
E. Expenses	0%	0%	0%	0%	0%	0%
F. Expected Post-Retirement Benefit Obligation (\$millions)	\$271.09	\$74.31	\$128.96	\$59.07	\$89.77	\$623.20
G. Expected Post-Retirement Benefit Obligation per Contract	\$123,223	\$255,361	\$270,924	\$335,625	\$49,406	\$125,645

- A. Exhibit 12.
 B. Exhibit 7
 C. Calculated from B and the age and sex of each contractholder.
 D. Calculation only considered participants who actually elected medical.
 E. Expenses are 0% because the assumed interest rate is net of expenses.
 F. $C \times D \times (1 + E)$
 G. F/A

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 5.1

CITY OF NEWTON
GASB 45 DETERMINATION

EXPECTED POST-RETIREMENT BENEFIT OBLIGATION - MEDICAL, Rx AND VISION
 7.75% interest

	Active Employees		Retirees			Total (6)
	(1)	(2)	(3)	(4)	(5)	
	<u>General</u>	<u>Uniformed</u>	<u>Pre-Medicare</u>	<u>Age 65+ Not on MC</u>	<u>Medicare</u>	
A. Number of Contracts	2,200	291	476	176	1,817	4,960
B. Annual Subsidy per Contract	n/a	n/a	\$16,602	\$22,016	\$4,159	
C. PV of Future Subsidies (\$millions) for All Employees	\$103.42	\$23.83	\$82.60	\$41.66	\$66.00	\$317.52
D. Percent Expected to Elect Medical at Retirement	100%	100%	100%	100%	100%	
E. Expenses	0%	0%	0%	0%	0%	0%
F. Expected Post-Retirement Benefit Obligation (\$millions)	\$103.42	\$23.83	\$82.60	\$41.66	\$66.00	\$317.51
G. Expected Post-Retirement Benefit Obligation per Contract	\$47,009	\$81,890	\$173,529	\$236,705	\$36,324	\$64,014

- A. Exhibit 12.
 B. Exhibit 7
 C. Calculated from B and the age and sex of each contractholder.
 D. Calculation only considered participants who actually elected medical.
 E. Expenses are 0% because the assumed interest rate is net of expenses.
 F. $C \times D \times (1 + E)$
 G. F/A

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 5.2

CITY OF NEWTON
GASB 45 DETERMINATION

CURRENT ANNUAL SUBSIDY - LIFE INSURANCE
 3.75% interest

	<u>Active</u> (1)	<u>Retired</u> (2)	<u>Total</u> (3)
A. Current Average Age of Group	46	74	60
B. Net Single Premium per \$1,000 of Life Insurance	n/a	649.23	448.49
C. % of Total Cost Represented by Full Premium Retirees Pay		69.1%	
D. % of Full Premium Retirees Pay		49.9%	
E. % of Total Cost Retirees Actually Pay Including Implicit Subsidy		34.5%	
F. % of Actual Cost Paid by City		65.5%	

- A. Exhibit 12
 B. Calculated based on average age
 C. $I(3)/H(3)$
 D. Exhibit 8
 E. $C \times D$
 F. $1 - E$

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 6.1

CITY OF NEWTON
GASB 45 DETERMINATION

CURRENT ANNUAL SUBSIDY - LIFE INSURANCE
 7.75% interest

	<u>Active</u> (1)	<u>Retired</u> (2)	<u>Total</u> (3)
A. Current Average Age of Group	46	74	60
B. Net Single Premium per \$1,000 of Life Insurance	n/a	445.23	225.73
C. % of Total Cost Represented by Full Premium Retirees Pay		50.7%	
D. % of Full Premium Retirees Pay		49.9%	
E. % of Total Cost Retirees Actually Pay Including Implicit Subsidy		25.3%	
F. % of Actual Cost Paid by City		74.7%	

- A. Exhibit 12
 B. Calculated based on average age
 C. $I(3)/H(3)$
 D. Exhibit 8
 E. $C \times D$
 F. $1 - E$

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 6.2

CITY OF NEWTON
GASB 45 DETERMINATION

CURRENT ANNUAL SUBSIDY - MEDICAL, Rx AND VISION

	<u>Actives</u> (1)	<u>Pre-Med. Retirees</u> (2)	<u>Med. Retirees</u> (3)	<u>Retirees 65 and Over Not on M.C.</u> (4)
A. Blended Annual Premium per Contract	n/a	\$12,350	\$5,199	\$9,917
B. Actual Annual Cost per Contract	n/a	\$19,072	\$5,199	\$24,000
C. Annual Member Contributions per Contract	n/a	\$2,470	\$1,040	\$1,983
D. Current Annual Subsidy per Contract	n/a	\$16,602	\$4,159	\$22,016

-
- A. Exhibit 8
 B. 154.43% of A for pre-M/C retirees < 65, 242% of A for retirees >65 not on M/C and 100.0% of A for M/C retirees.
 C. Exhibit 8
 D. B - C

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
 Exhibit 7

**CITY OF NEWTON
GASB 45 DETERMINATION**

Exhibit 8

MEMBER CONTRIBUTIONS

	Medical, Rx, <u>Vision</u> (1)	Life <u>Insurance</u> (2)
<u>Pre-Medicare Retirees - < 65</u>		
Blended Monthly Premium per Contract	\$1,029.13	\$9.45
Blended Annual Premium per Contract	\$12,350	\$113.40
Percent Paid By Members	20.0%	49.9%
Current Annual Amount Members Pay	\$2,470	\$56.64
<u>Pre-Medicare Retirees - > 65</u>		
Blended Monthly Premium per Contract	\$826.44	\$9.45
Blended Annual Premium per Contract	\$9,917	\$113.40
Percent Paid By Members	20.0%	49.9%
Current Annual Amount Members Pay	\$1,983	\$56.64
<u>Medicare Retirees</u>		
Blended Monthly Premium per Contract	\$356.16	\$9.45
Total Medicare Part B Monthly Premium	\$77.12	n/a
Blended Stop Loss Premium per Contract	n/a	n/a
Total Blended Monthly Premium per Contract	\$433.28	\$9.45
Blended Annual Premium	\$5,199	\$113.40
% Contractholders Pay	20.0%	49.9%
Current Annual Amount Members Pay	\$1,040	\$56.64

Medical monthly costs calculated from census and premium rates. Life monthly cost from Exhibit 9.
Percent paid by members from Exhibit 10
City reimburses 80% of Medicare Part B premium as well as 80% of regular insurance premium.

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 8

CITY OF NEWTON
GASB 45 DETERMINATION

Exhibit 9

LIFE INSURANCE IN FORCE

	<u>Active</u> (1)	<u>Retired</u> (2)	<u>Total</u> (3)
A. Number of Insureds	1,003	1,070	2,073
B. Average Benefit per Insured		\$5,000	
C. Current Amount of Insurance in Force (\$000)		\$5,350	
D. City Share of Life Insurance Monthly Premium		49.95%	
E. Total Monthly Rate/\$1000		\$1.89	
F. Total Annual Premium - City Responsibility		\$60,605	

-
- A. Exhibit 12
B. Exhibit 11.

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 9

**CITY OF NEWTON
GASB 45 DETERMINATION**

Exhibit 10

FUNDING INFORMATION

<u>Actives</u>		
Medical		All plans designed for actives are self-insured. Employees pay 20% of blended cost of actives and retirees not on Medicare. Pooling protection is included in the specified premium rates.
Drugs		Included with Medical
Dental		Actives pay <100% of the cost of the coverage.
Life Insurance		Fully insured. Current 100% monthly premium rate is \$9.45 per month for \$5,000 of coverage. Members pay 50% of the total premium - so they pay \$4.72 per month.
<u>Retirees Not on Medicare</u>		
Medical		Same as for Actives
Drugs		Same as for Actives
Dental		For the only plan available, retirees have to pay 100% of the cost of the coverage.
Life Insurance		Same as for Actives
<u>Retirees on Medicare</u>		
Medical		Plans designed for these participants are fully insured. When eligible for Medicare, retiree is transferred to a Medicare Supplement plan.
Drugs and Vision		Since plan is fully insured, stop loss coverage is included in the insurance rates.
Drugs		Same as for Actives
Dental		For the only plan available, retirees have to pay 100% of the cost of the coverage.
Life Insurance		Same as for Actives

Data provided by the City of Newton

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 10

CITY OF NEWTON
GASB 45 DETERMINATION

BENEFIT INFORMATION

<u>Actives</u>		
Medical		Choice of Harvard Pilgrim, Tufts EPO and Tufts POS Rates depend on choice of coverage The City only offers Individual and Family plans.
Drugs and Vision		Included if Medical Elected (Drug Copays per Medical Plan Elected Apply)
Dental		Several plans are available.
Life Insurance		All life insurance benefits are a flat \$5,000 with no reduction at retirement.
<u>Retirees Not on Medicare</u>		
Medical		Same Choices as for Actives
Drugs and Vision		Same Choices as for Actives
Dental		Only 1 plan is available. It is not subsidized by the City.
Life Insurance		Same Choices as for Actives
<u>Retirees on Medicare</u>		
Medical		Most participants have elected the Tufts Medicare Complement Plan (Medicare Supplement). A minority have elected Tufts Medicare Preferred, First Seniority Freedom and HMO Blue. Payment of Medicare Part B premiums are the responsibility of the retirees, however City reimburses 80%. Survivors from family contracts can continue coverage until they die. They may also re-enter the plan after initially declining coverage.
Drugs and Vision		Same Choices as for Actives Drug Plan Not Eliminated When Medicare Part D Took Effect
Dental		Only 1 plan is available. It is not subsidized by the City.
Life Insurance		Flat \$5,000

Data provided by the City of Newton

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 11

CITY OF NEWTON
GASB 45 DETERMINATION

CENSUS INFORMATION

	<u>General</u> (1)	<u>Uniformed</u> (2)	<u>Elected No Coverage</u> (3)	<u>Total</u> (4)
<u>Actives - Medical</u>				
Number of Contracts	2,200	291	75	2,566
Average Age	44	42		44
Average Service Years	10	15		
<u>Pre-Medicare Retirees - Medical/Under 65</u>				
Number of Contracts	476	Incl in Gen	Incl Above	476
Average Age	59			
<u>Pre-Medicare Retirees - Medical/65 and Over</u>				
Number of Contracts	176	Incl in Gen	Invl Above	176
Average Age	74			
<u>Medicare Retirees - Medical</u>				
Number of Contracts	1,817	Incl in Gen	Invl Above	1,817
Average Age	77			
<u>Life Insurance</u>		<u>Average Age</u>		
Number of Contracts - Actives	1,003	46	1,486	2,489
Number of Contracts - Retirees	1,070	74	1,034	2,104
Number Electing Life Insurance - Total	2,073	60	2,520	4,593
Percent of New Retirees Electing Medical				100%
Percent Under-65 Retirees Keeping Medical at Age 65 Retirees El				100%
Percent of Retirees Electing Life Insurance				45%

Data provided by the City of Newton

The City has noted that the declination rate for retiree medical insurance is negligible.

FINANCIAL RISK ANALYSTS

7/16/2008 10:47 AM
Exhibit 12